NPL-W7-1-1

federal register

Friday
July 16, 1982

Part V

Environmental Protection Agency

National Oil and Hazardous Substances Contingency Plan

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 300

[SWH-FRL 2163-4]

National Oil and Hazardous Substances Contingency Plan

AGENCY: Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: Pursuant to Section 105 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and Executive Order 12316, the Environmental Protection Agency is promulgating revisions to the National Contingency Plan (NCP) for oil and hazardous substances. The revised NCP effectuates the new responsibilities and powers created by CERCLA. CERCLA provides that actions taken in response to releases of hazardous substances shall, to the greatest extent possible, be in accordance with the revised NCP. Section 311 of the Clean Water Act provides that actions taken to remove oil discharges shall, to the greatest extent possible, be in accordance with the NCP. The revised NCP, promulgated today, shall be applicable to response actions taken pursuant to CERCLA and section 311 of the Clean Water Act.

DATES: The promulgation date for the revised National Contingency Plan shall be July 16, 1982. Under section 305 of CERCLA, this revised Plan cannot take effect until Congress has had at least sixty "calendar days of continuous session" from the date of promulgation in which to review the Plan. Since the actual length of this review period may be affected by Congressional action, it is not possible at this time to specify a date on which this revised Plan will become effective. Therefore, EPA will publish a notice in the Federal Register at the end of the review period announcing the effective date of this revised Plan.

ADDRESSES: The public docket for the revised National Contingency Plan is located in Room S-398, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460, and is available for viewing from 9:00 a.m. to 4:00 p.m., Monday through Friday, excluding holidays.

FOR FURTHER INFORMATION CONTACT: Sylvia Lowrance, Office of Emergency and Remedial Response (WH-548), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460, Phone (202) 382-2203.

SUPPLEMENTARY INFORMATION:

I. Introduction

Pursuant to Section 105 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, Pub. L. 96-510 ("CERCLA" or "the Act") and Executive Order 12316, the Environmental Protection Agency ("EPA" or "the Agency"), on March 12, 1982, proposed revisions to the National Contingency Plan (NCP) (47 FR 10972). The supplementary information section of the March 12 proposal discussed in detail the statutory basis of the NCP and the nature and purpose of the proposed revisions. (See 47 FR 10972 through 10978.) The Agency allowed the public forty-five days to submit comments on the proposed revisions. The Agency received 146 comments totalling over 1,000 pages in length on the proposed revisions.

Today, the Agency is promulgating revisions to the NCP. In preparing the revisions to the Plan, the Agency has carefully considered all of the public comments submitted on the proposed revisions. The Agency has made many modifications to the proposed revisions in response to the public comments.

In developing the proposed revisions to the Plan, the Agency's primary concerns were to ensure that the revised Plan met the statutory requirements of CERCLA and section 311 of the Clean Water Act (CWA), and that it established an effective response program. The Agency reviewed the public comments and incorporated suggested changes where appropriate.

All significant comments and the Agency's response to those comments are discussed below. EPA believes that the revised Plan includes all of the expanded CERCLA response authorities and adequately meets each of the statutory requirements of CERCLA and section 311 of the CWA. In meeting these requirements, EPA has also sought to ensure that the Plan does not contain unnecessarily rigid or cumbersome provisions, or provisions that are beyond the statutory mandate. EPA did not believe it was necessary to expand upon the national response organization and procedures established by Subparts A through D, nor upon the procedures for responding to oil discharges in the existing Plan. Experience has shown the national response organization and the oil discharge procedures to be efficient and effective methods for responding to environmental emergencies. It would be counter-productive to abandon established and workable procedures. Therefore, EPA has left the response structure of the existing Plan generally intact so that the proven national and regional response structure may be used for the expanded hazardous substance response authorities of CERCLA.

Section II of this preamble explains how the revised NCP meets the statutory requirements of section 105 of CERCLA and related provisions of section 311 of the CWA. The preamble to the proposed revisions discussed the revisions in relation to each of the subparts of the Plan and not with respect to how each statutory requirement was satisfied (47 FR 10972 through 10978). To ensure that it is clear how the revised Plan addresses each of the statutory requirements, Section II discusses in detail those provisions of the Plan that implement each of the statutory requirements.

Sections III, IV, V, and VI of this preamble address the major issues raised in the public comments. The sections summarize the significant comments submitted on each of these issues and the Agency's response to these comments. Section VII addresses additional comments that related to specific provisions in Subparts A through H of the Plan. Section VIII addresses any remaining general comments.

II. Statutory Requirements for the NCP

The following is a section-by-section analysis of each component required by section 105 of the CERCLA and related provisions of section 311 of the CWA, and a description of how the Plan meets each requirement.

1. *Section 105(1)—Methods for discovering and investigating facilities at which hazardous substances have been disposed of or otherwise come to be located.*

(a) *Discovery.* Section 300.63 of the Plan lists five methods by which a release or facility can be discovered. The major tools for discovery are those provided by Congress in CERCLA. Section 103(a) of CERCLA requires persons in charge of facilities or vessels to notify the National Response Center (NRC) as soon as they have knowledge of releases into the environment of hazardous substances in amounts equal to or greater than reportable quantities determined pursuant to section 102 of CERCLA. Section 103(c) of CERCLA requires persons to notify EPA of the existence of certain hazardous waste treatment, storage, and disposal facilities. EPA published guidance with respect to this requirement on April 15, 1981 (46 FR 22144). In addition, section 104(e) of CERCLA provides investigatory authority which may lead to discovery of a release by an investigating official. Section 300.63

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II. Statutory Requirements for the NCP

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further provides for discovery of releases through inventory efforts (e.g. section 3012 of the Resource Conservation and Recovery Act (RCRA)) and reports required by Federal or State permits. The Plan lists existing requirements for reporting releases and authorities for discovering releases, and complements these methods by referencing other sources of discovery, including random inventories and incidental observations.

EPA believes that the methods discussed above are adequate to discover most releases. The Agency's experience has shown these methods to be effective. When implementing the section 103(c) notification requirements, EPA received 11,000 reports of facilities where hazardous wastes are or had been potentially treated, stored or disposed. Moreover, since enactment of CERCLA, persons have been required to immediately report to the National Response Center (NRC) hazardous substance releases that exceed reportable quantities. The reports which are required by these sections cover most releases for which EPA and the United States Coast Guard (USCG) are delegated response authority under section 104 of CERCLA.

(b) *Investigation.* For investigating releases, the Plan sets forth a three-step process: (1) Initial investigation to determine the nature of the release (§ 300.64); (2) screening to determine whether the release warrants immediate response or further investigation (§ 300.64(a) and (c) and 300.65); and (3) further investigation for non-emergency releases which may warrant Federal action (§§ 300.66, 300.67(d) and (e), and 300.68(e) through (i)).

Section 300.64 of the Plan details the initial steps to be undertaken in investigating a reported release through a preliminary assessment. The assessment can be adapted to address the specific nature of a particular release. For example, a release that could cause immediate and significant harm to human health, welfare or the environment should be assessed much more rapidly than a release in which the risk of harm is less acute and immediate. Flexibility in the initial investigation process is provided for in § 300.64(a)(1) through (4) which sets forth a methodology for an initial evaluation of the release based on readily available data. In the case of hazardous waste management facilities, § 300.64(b) provides for the gathering of additional data when more time is available. The distinctions between §300.64(a) and (b) recognize that, in responding to most CERCLA releases, additional information may be necessary beyond that required to respond in classic spill situations under section 311 of the CWA. Thus, in order to implement CERCLA effectively, EPA has added the additional components of § 300.64(b). EPA considered and decided against adding greater detail to the requirements in this section because the scope of the assessment is most appropriately determined by the conditions of the release.

After the preliminary assessment, the Plan provides for either terminating investigation activities under the conditions detailed in § 300.64(c), taking an immediate removal pursuant to § 300.65 or continuing investigatory activities of non-emergency releases as discussed in § 300.66. The Plan allows for the three methods by which investigatory activities may be continued: through use of investigatory authorities provided in section 104(b) of CERCLA; through use of entry and investigatory authorities allowed under section 104(e) of CERCLA (see § 300.66(c)(1)); and through inspection of the release as detailed in § 300.66(c)(2).

The investigatory methodology described above and included in the Plan provides EPA with sufficient discretion to undertake the necessary investigatory activities as determined by the nature of the release in a manner consistent with the statute. In developing the investigatory methodology, the Agency relied upon experience gained under the section 311 program for investigating releases, which has proven to be very effective. The authorities are designed to provide response personnel with a detailed framework for investigation of releases, while still providing them with enough flexibility to tailor assessments to particular release conditions.

2. *Section 105(2)—Methods for evaluating, including analyses of relative costs, and remedying any releases from facilities which pose substantial danger to the public health or the environment.*

(a) *Evaluation.* The investigation activities explained above are the first step contained in the Plan for evaluating a release. Once investigatory activities are completed, the Plan establishes an evaluation scheme based on the type of release under consideration. The basic premise supporting the evaluation scheme is that the less imminent the threat, the greater the time available for the evaluation process.

For releases requiring immediate removal (i.e., emergency response), § 300.65 of the Plan provides for the initiation of response action without delay based upon the determination during the preliminary assessment that an emergency situation requires immediate response action (see §§ 300.64(a) and 300.65(a)). For releases that may require planned removal (i.e., short-term but not emergency response), § 300.67 provides for evaluation of the release by the State requesting the removal. The evaluation must include the information required by §300.67(b) of the Plan. The evaluation of candidates for planned removal continues as EPA applies the factors in § 300.67 to determine whether the release should, in fact, be funded as a planned removal.

The most extensive evaluations are those required for releases which potentially require remedial action (i.e., long-term response) and thus are candidates for inclusion on the National Priorities List. After the inspection has been completed (see § 300.66(b) and (c)), releases may be ranked pursuant to the Hazard Ranking System. This ranking system provides for a more detailed evaluation of the particular threats presented by the release and determines placement on the National Priorities List. (The Hazard Ranking System is contained in Appendix A and is explained in section V(A) below). Evaluation activities continue even after the release is included on the National Priorities List. Because of the complexity of releases that may require long-term remedial response, and the need to assure that remedies will adequately mitigate the threat from individual releases, § 300.68(f) through (i) provides for both investigation and study prior to undertaking a remedial response. Both of these steps include a final evaluation of the release and potential remedies based on factors enumerated in § 300.68(g) through (j).

EPA believes that the methods for evaluating releases discussed above and included in the Plan provide the most effective evaluation approach for dealing with widely varying threats posed by releases. Where the threat is immediate, evaluation actions are limited in order that rapid response can be taken. As the threats become less immediate, the Plan allows more extensive evaluation.

(b) *Methods for evaluating relative costs.* In the area of cost evaluation, EPA again bases the level of evaluation on the immediacy of the threat. First, for immediate removals, cost evaluation is limited to the statutory threshold of six months or $1 million unless an emergency continues (see § 300.65(d)). Thus, once the Agency determines that an immediate removal is necessary, the Plan vests in the lead agency the

authority to take whatever action the lead agency deems necessary to abate the emergency. In an emergency, it is not possible to require detailed cost evaluation because of the critical need to act as rapidly as possible.

In the case of a planned removal, the Plan provides for additional cost evaluation requirements. Section 300.67(a)(1) includes cost-savings as one of the criteria for taking a planned removal. Moreover, the nature of the response itself provides for cost-savings by allowing preventative actions. Finally, like immediate removal, § 300.67(e) imposes the statutory limits of six months of $1 million on the action. Thus, the Plan maintains stringent limitations on the costs of planned removal actions which must be included in the planning of the project.

The remedial response category provides for extensive cost evaluation. From the time the proposed extent of a remedial action is determined pursuant to §300.68(e), the costs of the remedial alternatives are considered. First, after alternatives are initially developed as provided in § 300.68(g), the Plan requires analysis of the cost of each alternative relative to the other alternatives under consideration (see §300.68(h)). On the basis of this analysis of comparative costs and other factors, the Plan calls for an assessment of the various alternatives in order to eliminate those that are more expensive but that do not provide significantly greater health or environmental protection. For the remaining alternatives, the Plan then requires (§300.68(i)) that costs be examined in detail for each individual alternative. This entails extensive evaluation of the costs of each remedial alternative to facilitate comparison of feasible alternatives. This analysis is used to make the final judgment on the appropriate remedial alternative based on costs and the other factors required by § 300.68(j).

(c) *Methods for remedying releases.* Section 300.70 contains a lengthy, although not exhaustive, list of methods for remedying releases. This list provides information on those methods of remedying releases which are considered appropriate and demonstrated methods. In addition, EPA has developed a technical handbook which can be utilized along with this section of the NCP to provide more technical information on the circumstances and types of releases in which these methods may be successfully employed. The manual is entitled "Handbook for Remedial Action at Waste Disposal Sites" and is available from Environmental Protection Agency, Office of Research and Development, Municipal Environmental Research Laboratory, Solid and Hazardous Waste Research Division, Cincinnati, Ohio 45268.

3. *Section 105(3)—Methods and criteria for determining the appropriate extent of removal, remedy, and other measures authorized by CERCLA.*

Sections 300.65(c) and 300.67(d) establish the procedures by which the appropriate extent of removal is determined. For this limited response category, EPA has determined that the appropriate extent of action is the abatement of the threat that required the initiation of a removal action. Therefore, in the case of immediate removal, EPA has limited the extent of removal to abatement of the immediate and significant risk (see § 300.65 (a) and (c)). Likewise in the case of planned removals, the Plan limits the extent of the action to abatement of the problem posed by the presence of factors listed in § 300.67(c).

EPA believes that this type of *a priori* procedure for limiting removal actions is necessary because removal response is statutorily a more limited action than remedial response. Removal actions are intended to eliminate the threat which precipitated the action. These responses may not fully abate the threat caused by a release. However, without such limitations, an inordinate share of the Fund might be spent on completing removal actions at releases which pose a less significant threat than other releases which have been placed on the National Priorities List. Moreover, if removal actions were not limited in scope, projects might continue until reaching the statutory limitation of six months or $1 million, without having achieved any tangible or specified clean-up objectives.

Section 300.68 of the Plan establishes methods and criteria for determining the appropriate extent of remedy. Remedial response involves long-term actions to mitigate threats primarily from hazardous waste management facilities. This section of Subpart F is one of the most extensive sections of the Plan. The Agency has far less experience with remedial actions than with removal actions. Under the removal program in section 311 of the CWA, EPA gained a great deal of experience in undertaking short-term clean-up actions, primarily in response to spills of oil. However, CERCLA created remedial action as a new type of response. In order to assure that response personnel have adequate guidance to follow when investigating, planning, and implementing remedial response, EPA has provided a detailed systematic procedure for determining the appropriate extent of remedy in Subpart F. The procedure is structured in a step-by-step format which requires a series of analyses and judgments based upon criteria enumerated in the Plan. The methodology set forth in § 300.68 includes:

(1) An initial scoping of the project based on criteria in § 300.68(e) to determine the type or types of remedial action that may be necessary. (Remedial response is categorized as initial, source control, or off-site remedial action.)

(2) A remedial investigation to determine the precise nature and extent of the problem and to assure that the remedial evaluation was accurate (see § 300.68(f)).

(3) Development of alternatives based on the type or types of remedial action necessary (see § 300.68(g)).

(4) An initial screening of the alternatives based on economic, engineering and environmental criteria specifically enumerated in § 300.68(h)(1), (2), and (3). This step requires a decision, based on the criteria, to eliminate certain alternatives because: (a) The alternative requires an expenditure of money far in excess of other alternatives (without providing substantially greater public health or environmental benefit) (§ 300.68(h)(1)); (b) the alternative has significant adverse environmental impacts or fails to effectively contribute to the protection of public health, welfare or the environment (§ 300.68(h)(2)); and (c) the alternative is not feasible from an engineering perspective (§ 300.68(h)(3)).

(5) Detailed analysis of remaining alternatives based on components specifically referenced in § 300.68(i)(2).

(6) The lead agency's determination of the appropriate extent of remedy, based upon its selection of the alternative which meets the standard of § 300.67(j) (i.e., "the lowest cost alternative which effectively mitigates and minimizes damage to and provides adequate protection of public health, welfare and the environment").

EPA believes that this process provides a sound basis for determining the appropriate extent of remedy, particularly given the limited experience in remedying hazardous substance releases. This process allows for the selection of the appropriate remedies developed through careful study and inquiry without requiring a rigid selection process which would preclude the flexibility needed to incorporate our expanding knowledge and experience in developing remedies. Significant issues concerning the Agency's selection of the

appropriate extent of response are discussed in Section III of this preamble.

4. *Section 105(4)—Appropriate roles and responsibilities for the Federal, State, and local governments and for interstate and non-governmental entities in effectuating the Plan.*

EPA has developed an entire subpart and numerous other provisions of the Plan to assure efficient and effective coordination of all participants in response to oil discharges and hazardous substance releases. These provisions of the Plan are largely based on extensive experience gained under the section 311 response program.

The following sections of the Plan address Federal agency involvement:

(1) Section 300.21—specifies responsibilities delegated to each Federal agency under Executive Orders 11735 and 12316.

(2) Section 300.22—encourages all Federal agencies to coordinate activities through the National Response Team (NRT) and Regional Response Team (RRT) structure and with affected private and public entities and to make facilities and resources available for response actions.

(3) Section 300.23—identifies those Federal agencies which are members of the NRT and which may be called upon by response personnel for assistance; encourages use of regional contingency plans to specify roles relevant to the subject area; requests that Federal agencies appoint members to participate in the national response structure; and specifically enumerates the new responsibilities for hazardous substance response among EPA, USCG, the Department of Health and Human Services (HHS), the Department of Defense (DOD), and the Federal Emergency Management Agency (FEMA).

State and local roles and responsibilities are specified in § 300.24, which requests that each State participate in RRTs; gives States authority to fully participate (and vote) on the RRT; encourages local governments to participate in RRT activities; encourages States to use enforcement authorities; and encourages States to take the lead on CERCLA responses by entering into agreements with the Federal government. In addition, a new § 300.62 has been added which addresses the State role in taking remedial response and the States' responsibilities when doing so. A more thorough discussion of the State role is contained in Section IV of this preamble.

Roles of private entities are specified in § 300.25, which encourages and stresses the critical importance of private commitments for assisting in response, and requests that private entities assume specific responsibilities in the appropriate regional or local contingency plans. This section also contains information on the safe and effective use of volunteers in response actions.

Subpart C further specifies the roles that each of these groups can play in the national response structure—Federal agencies through their participation in the NRT (§ 300.32(a)); and Federal agencies, States, and localities through their participation in the RRT (§ 300.32(b)). Within this national framework, Subpart C further discusses the role of the on-scene coordinator (OSC) in coordinating with States, the private sector and other Federal entities. For example, § 300.33(b) requires the OSC to notify States and Federal agencies when they are affected or when their expertise is requested in a response action. While the Plan contains the critical framework for national roles and responsibilities, regional and local plans are designed to specify how these roles and responsibilities will be carried out in light of particular regional and local capabilities and needs.

5. *Section 105(5)—Provision for identification, procurement, maintenance, and storage of response equipment and supplies.*

The requirements of CERCLA section 105(5) are satisfied in several sections of the Plan, briefly summarized here. The NRT evaluates equipment readiness and coordination, and makes recommendations as to the appropriate equipping and protection of response teams (§ 300.32(a)). The NRT also coordinates the supply of equipment and personnel to the affected region in the event of a response action (§ 300.34(h)). The RRTs consider equipment readiness and similar issues in their continuing reviews of regional and local responses (§ 300.32(b)(6)). The role of the RRTs in requesting and coordinating assistance and provision of resources from Federal, State, and local government agencies and from private parties in the event of a release (§ 300.34(f)) bears directly on the requirements of CERCLA section 105(5). Section 300.34 of the Plan also provides for the use of the National Strike Force and Strike Teams which make available specialized containment and removal equipment, emergency task forces managed by USCG OSCs who have the capability to deploy equipment, and the Emergency Response Team (ERT) of the EPA which can provide access to specialized decontamination equipment. The Plan also devotes a separate section, § 300.37—Response Equipment, to the Spill Clean-up Inventory system which is available for obtaining rapid information on the location of response and support equipment.

In addition to these provisions in the Plan which insure access to response equipment and supplies, Subpart D emphasizes the importance of the development of Federal regional plans for each standard Federal region, and of Federal local plans wherever practicable. Included in these plans should be information on all useful facilities and resources available from all sources that can be employed in the event of a release (§§ 300.42(a) and 300.43(a)). The Plan does not discuss in great detail the precise division of responsibility assigned to all levels of government because the amount and type of resources available will vary among regions, as will the need for particular types of resources. In addition, it is possible that different levels of government will take more active roles in planning and carrying out response activities. Accordingly, the Plan provides that responsibilities in the identification, procurement, maintenance, or storage of equipment and supplies shall be assigned at this level through the development of Federal regional and Federal local plans.

6. *Section 105(6)—A method for and assignment of responsibility for reporting the existence of such facilities which may be located on federally owned or controlled properties and any releases of hazardous substances from such facilities.*

Section 300.23(d) sets forth responsibilities of all Federal agencies for reporting the releases of hazardous substances and discharges of oil from facilities or vessels which are under their jurisdiction or control. The reporting procedures in § 300.23(d) are in accordance with CERCLA section 103 and Subparts E and F of the Plan. Specifically, in Subpart E, § 300.51(b), reports of discharges are directed to the NRC or the nearest USCG or EPA office. If not previously reported to the responsible OSC, all reports are required to be relayed promptly to the NRC. Subpart F, § 300.63(b), reiterates the statutory requirement of CERCLA section 103(a) for immediate notification of the NRC by the person in charge of a vessel or facility as soon as he has knowledge of a release from the vessel or facility of a hazardous substance in an amount equal to or greater than the reportable quantity, established pursuant to section 102 of CERCLA. Any releases that have not been previously reported should also be promptly

reported to the NRC. Thus the Plan both assigns responsibility to the Federal agencies involved and provides the method by which such reporting is to be accomplished.

7. Section 105(7)—Means of assuring that the remedial action measures are cost-effective over the period of potential exposure to hazardous substances of contaminated materials.

EPA has devoted a great deal of attention to developing a process that will insure the cost-effectiveness of remedial action measures. There are several aspects of this process which should be noted. First, the Plan limits the extent of evaluation and investigation activities if the release does not present complex technical problems or requires rapid response. Section 300.68(d) and (e) focuses investigation activities and development of alternatives on the problems presenting the greatest need. Second, the Plan emphasizes the systematic development of remedial alternatives (including, where appropriate, the alternative of taking no action) which forms the basis for examining cost-effectiveness. Third, the initial screening of remedial action alternatives to eliminate those with extremely high costs that do not offer significantly greater protection further safeguards the process against unnecessary expenditures. Fourth, the remaining viable alternatives must be evaluated in terms of their costs, the level of protection that they provide, their reliability in providing that level of protection, and the ability to implement the remedy after considering technical, environmental, legal, and administrative constraints (§ 300.68(i)).

PA r tes that, in both the initial screening and the detailed analysis of alternatives, the costs of alternatives must be compared over time and must include operation and maintenance costs (§ 300.68(h)(1) and (i)(2)(ii)). This ensures that the statutory requirement for consideration of the duration of costs is satisfied. Finally, EPA has included in § 300.68(j) an explicit statement that the extent of remedy to be selected for each site will be the cost-effective remedial alternative. Thus, EPA has both established the procedures for arriving at a cost-effective remedial action and provided a decision rule for selection of cost-effective remedies in order to fulfill the statutory requirement.

8. Section 105(8)—Criteria for determining priorities among releases or threatened releases and, based upon this criteria, a list of national priorities.

EPA has included as Appendix A to the Plan a Hazard Ranking System (HRS) which, together with the administrative system established in § 300.66, constitutes the criteria and methods EPA is using to establish national priorities for remedial action. The Agency presented a detailed discussion of the development and components of the HRS in the preamble to the proposed revisions (see 47 FR 10975 through 10976). Additionally, a discussion of the significant public comments on the HRS and the National Priorities List and EPA's response to those comments is presented in Section V of this preamble. EPA is deferring publication of the National Priorities List at this time. It will be included as Appendix B to this Plan. Accordingly, this Appendix is reserved.

9. Section 105(9)—Specified roles for private organizations and entities in preparation for response and in responding to releases of hazardous substances, including identification of appropriate qualifications and capacity thereof.

Section 300.25 specifies the roles of volunteers, industry groups, and academic organizations in response actions. This section stresses the important role of these groups in providing scientific and technical information needed in devising clean-up strategies as well as the assistance role of volunteers in response. As discussed in subsection 4 above, coordination of these entities is achieved through the national and regional response structure. It is critical that private entities be coordinated closely with governmental entities to assure efficient response actions. Therefore, the Plan calls for specific commitments of resources by private entities in § 300.25, and for detailing these specific commitments in regional and local plans. EPA believes these plans are the appropriate mechanisms to list those private resources that are nearby, applicable to local conditions, and readily available.

10. Section 105 also requires that the Plan specify procedures, techniques, materials, equipment, and methods to be employed in identifying, removing, or remedying releases of hazardous substances comparable to those required under section 311(c)(2) (F) and (G) and (j)(1) of CWA.

Section 311(c)(2)(G) of the CWA requires that the Plan include a schedule specifying dispersants or other chemicals, if any, that may be used in removing oil or hazardous substances from water. Subpart H of the Plan establishes procedures for authorizing the use of dispersants and other chemicals for removing oil discharges or releases of hazardous substances. Subpart H vests authority in the OSC to authorize use of any dispersant or other chemical to move an oil discharge if such dispersant or chemical is on EPA's Acceptance List developed under Annex X of the existing Plan. Use of dispersants and chemicals not on EPA's list may be authorized by the Administrator or her designee. Section VII(H) of this preamble contains a further discussion of this issue.

The remaining provisions of sections 311(c)(2)(F) and (j)(1) of the CWA require development of procedures that have comparable provisions in section 105 of CERCLA and have been discussed above. With regard to comparable provisions for the removing and remedying of hazardous substance releases, § 300.70—Methods of Remedying Releases, details the types of techniques that may be considered in remedial actions. Furthermore, both § 300.65—Immediate Removal, and § 300.67—Planned Removal, contain information on the types of techniques and measures which may be used for removal action for hazardous substance releases.

III. Comments on Determining the Appropriate Extent of Response

The Agency received many comments on the Plan's provisions in Subpart F relating to the determination of the appropriate extent of response. Most of the comments focused on the provisions for determining the appropriate extent of remedy. While some commenters supported the process established in § 300.68 for selecting a remedy, many commenters criticized the Plan for not explicitly requiring consideration of State and Federal health and environmental standards in development of remedies. Similar comments stated that the Plan should include specific levels of clean-up that must be attained with any remedy.

EPA developed the methodology for determining the appropriate extent of remedy based on the recognition that experience in developing remedies for hazardous waste sites is limited. Moreover, each hazardous waste site has unique characteristics which merit individual attention. Often the unique characteristics of sites will represent factors that have never been dealt with before. These considerations led EPA to develop a methodology which would provide structured and reasoned decision-making while still allowing the flexibility to deal with unique and unforeseen characteristics. EPA believes the system included in § 300.68 of the NCP accomplishes these goals.

A. Environmental Standards

The system does not explicitly require that environmental standards be used in determining the appropriate extent of remedy. However, § 300.68 does specify "environmental effects and welfare concerns" as one of the criteria to be considered in determining the appropriate extent of remedy. In some cases, this would allow EPA to consider applicable standards in selecting the appropriate remedy. It must be noted, however, that circumstances will frequently arise in which there are no clearly applicable standards. For instance, acceptable levels of hazardous substances in soil are not established, and there are no generally accepted levels for many other hazardous substances in other media. Even where there are standards for a particular substance, they may not be applicable to the conditions surrounding the release. Therefore, if the Plan included a rigid requirement that standards be met, it would obscure the real issue in many cases of how to adequately protect public health.

EPA cannot develop new standards for the hundreds of substances it will be confronted with in response actions. Not only is the requisite legal authority lacking in CERCLA, but such a task would also be enormous, costly and time-consuming, and would unduly hamper the clean-up of releases, which is CERCLA's primary mandate. Therefore, EPA has developed a system for decision-making which has as its primary feature a reasoned process that contains a series of checks throughout to ensure that the decision-making process produces an effective remedy. The methodology emphasizes cost-effective, environmentally sound remedies which are feasible and reliable from an engineering standpoint.

B. Cost Effectiveness

Several commenters argued that the process for selecting a remedy placed too much emphasis on cost.

Although cost does play an important role in selection of remedies, it does not take precedence over protection of public health, welfare and the environment. First, the initial scoping of a project provided for in § 300.68(e) does not involve any consideration of cost other than requesting Fund financing for the work. The primary consideration at this stage is defining the nature of the problem requiring remedy. As alternatives for remedying the release are developed under § 300.68(g), again the primary emphasis is on the techniques available to clean up, not on cost.

Cost considerations are first addressed when alternatives are initially screened in § 300.68(h). This cost analysis is required by section 105(2) of CERCLA. EPA has modified § 300.68(h)(1) to clarify that alternatives cannot be rejected on the basis of cost alone, since any clean-up alternative would be more costly in simple dollar terms than a no action alternative. Alternatives may be rejected for cost reasons at this stage, but only if they do not provide substantially greater public health or environmental benefit. This section requires that in order for alternatives to be given further consideration they must be technically and environmentally sound and must effectively contribute to protection of public health, welfare and the environment. For the alternatives that remain after the initial screening, a detailed analysis is required of their cost, engineering feasibility, and environmental, welfare and public health effectiveness.

Some of the commenters' concern as to the extent of the Plan's emphasis on environmental and public health protection could be the result of an inadvertent omission in the Federal Register of one of the factors requiring analysis in § 300.68(i). Section 300.68(i)(2)(iv) requires comparative assessment of alternatives in terms of their effectiveness in minimizing and mitigating the health or environmental problem. This assessment is essential, along with consideration of cost and engineering reliability, in making the decision required by § 300.68(j). The final decision on the appropriate alternative is based on cost-effectiveness; it selects the lowest cost alternative which effectively mitigates and minimizes damage to and provides adequate protection of public health, welfare and the environment (§ 300.68(j)). EPA notes that this series of analyses and check points explicitly requires remedies that provide the requisite protection of public health while still meeting statutory requirements for analysis of costs and cost-effectiveness. Cost alone may not control these decisions.

IV. Comments on the Role of States in Implementing the Plan.

Several commenters stated that the Plan generally failed to adequately identify the roles of State and local governments. Other more specific comments on the role of States included: (1) That States should be allowed to designate OSCs and participate fully in the national response structure; (2) that the Plan should allow greater State participation in decision-making regarding the need for and extent of CERCLA-funded response; (3) that the Plan should specify procedures for entering into contracts or cooperative agreements; and (4) disagreement with the requirement that States share in response costs other than those costs specified in section 104(c)(4) of CERCLA.

EPA agrees with commenters that the States should play a large role in the Superfund program. Subpart B of the Plan provides extensive detail as to States' participation in response actions (see discussion in Section II(4) above). To the extent States are willing and capable, the Plan allows States to participate fully in the national response structure. In addition to the specific provisions cited in section II(4) of this preamble, the Plan also encourages State involvement and delineates State roles in the following provisions.

(1) Section 300.25(b)—encourages use of technical and scientific information generated by States.

(2) Section 300.25(c)—encourages State officials to coordinate volunteers pursuant to local plans.

(3) Section 300.32(a)(7)(iv)—allows NRT to develop procedures to improve coordination with States.

(4) Section 300.32(b)—includes States on RRTs.

(5) Section 300.32(b)(2)—allows State membership in RRT and allows additional State representatives as observers.

(6) Section 300.32(b)(5)—encourages States to participate actively in RRT activities and designate individuals to assist in development of Federal regional and Federal local plans, and to serve as the contact point for coordinating response with local governments.

(7) Section 300.32(b)(6)(vii)—requires RRT to include in reports to NRT efforts taken to improve State and local coordination.

(8) Section 300.33(b)(3)—requires the OSC to coordinate response efforts with appropriate State agencies.

(9) Section 300.33(b)(5)—requires OSC to notify States of possible discharges or releases.

(10) Section 300.34(d)(3)—requires the SSC to assist OSC in responding to State requests for assistance.

(11) Section 300.34(f)(6)—gives the States participating in the RRT the same status as any Federal member of the RRT.

(12) Section 300.36(c)—requires the NRC to advise States of notices of discharges or releases.

(13) Section 300.42(a)—requires RRTs to work with States in developing regional plans.

(14) Section 300.43—specifies that local plans should provide for coordination with the State.

(15) Section 300.55(a)(5)—provides for OSC to determine whether State has capability and an agreement in place to undertake oil discharge response, in lieu of Federal lead response being taken.

(16) Section 300.57(b)—requires the State representative to the RRT and DOI to arrange for use of volunteers for waterfowl affected by oil discharges.

(17) Section 300.58(f)(4)—allows States to be reimbursed for oil removal pursuant to 33 CFR Part 153.

(18) Section 300.61(c)—encourages State participation in response actions.

(19) Section 300.63(b)—requires the NRC to notify the State when notices of releases are received pursuant to section 103(a) of CERCLA.

(20) Section 300.66(c)(1)—requires State officials responsible for providing Fund-financed response to coordinate with those responsible for enforcement activities.

(21) Section 300.66(d)—establishes a system by which States can submit candidates for the Nation Priorites List.

(22) Section 300.61(b)—requires OSC to consult with affected States before authorizing use of dispersants of other chemicals.

In addition to these numerous provisions, to respond to commenter's concerns, EPA has added a new § 300.62 which specifically outlines the manner in which States may enter into contracts and cooperative agreements for response actions pursuant to CERCLA. EPA believes that State participation and cooperation are crucial to undertaking response actions. Therefore, under this section, States are encouraged to undertake response actions. The extent of activities that a State will be authorized to undertake will be specified in the cooperative agreement or contract. EPA cannot specify in the Plan all authorities which a State will exercise because the specific content of each agreement or contract will be determined by the nature of the response action to be taken, the extent of State capabilities, and the extent to which the State wishes to have responsibility for the response. Section 300.62(d) sets forth commitments which the State must provide prior to remedial design activity. Section 300.62 also authorizes contracts or cooperative agreements for undertaking removal action.

EPA agrees with commenters that States should be able to designate OSCs and act as full partners in the response structure. Providing that statutory and administrative requirements are met by States, the Plan permits and, in fact, encourage States to take the lead on response actions pursuant to a contract or cooperative agreement. In order to clarify that an OSC may be a State official whose scope of authority is specified in the cooperative agreement, EPA has modified the definition of "On-Scene Coordinator" in § 300.6. Moreover, to clarify that a "lead agency" may be a State acting pursuant to the terms of a contract or cooperative agreement, EPA has modified the definition of lead agency in § 300.6 as well. These modifications are discussed at greater length in section VII(A) of this preamble.

Finally, many of the comments questioned provisions included in the Guidance for Entering into Cooperative Agreements. EPA notes that this guidance was published the day before the NCP was proposed. The guidance is not a part of this Plan, and thus a discussion of the provisions in that guidance is not appropriate to a discussion of the provisions of this Plan. However, one issue which was raised in this context also affects the Plan. The issue is whether the statute allows EPA to require cost-sharing by States when it is not explicitly set forth in the statute. In the Plan, this issue is relevant to section § 300.67(b)(4) which requires States to share costs of planned removals.

CERCLA section 104(c) requires that no remedial actions be provided pursuant to section 104 of CERCLA unless the State in which the release occurs first enters into a contract or cooperative agreement providing assurances that (1) The State will assure all future maintenance of the removal and remedial action; (2) the State will assure availability of an acceptable hazardous waste disposal facility, if necessary; and (3) that the State will pay either 10 per cent of the cost of the remedial action (including all future maintenance) or, in the case of a facility that was owned at the time of disposal of hazardous substances therein by the State or political subdivision thereof, at least 50 per cent of any sums expended in response to a release at such a facility. The statute is silent with respect to State cost-sharing for removal actions at privately-owned sites. EPA will require that States requesting Fund-financed removals enter into an appropiate cooperative agreement or contract. EPA's general grant regulations provide that grantees and those receiving Federal assistance through a cooperative agreement must share project costs except as otherwise provide by law (see 40 CFR 30.720(a)). Where, as here, the statute is silent as to cost-sharing on certain response actions, EPA can require the States carrying out such actions to contribute at least 5 per cent of the cost of the action. Pursuant to its grant regulations, EPA has decided to require that States pay 10 per cent of planned removal costs at privately-owned sites. The same requirement shall apply to planned removals provided pursuant to a State/EPA contract. The type of legal instrument (i.e., cooperative agreement or contract) used in authorizing the planned removal should not affect the State's share of the cost and, therefore, both arrangements will require a 10 per cent State cost share.

V. Comments on the Hazard Ranking System and the National Priorities List

The preamble to the proposed revisions included a detailed discussion of the Hazard Ranking System (HRS) and the National Priorities List (NPL) (47 FR 10975 through 10977). The Agency received extensive comments on the HRS and NPL. Many of the comments supported the basic structure of the HRS and EPA's proposed development of the NPL. Others made suggestions for general and specific modifications. The Agency has adopted many of the suggested comments and they are discussed below. The HRS is included as Appendix A to the revised Plan. In the preamble to the proposed revisions, the Agency explained why it was deferring publication of the NPL (47 FR 10977). Now that the HRS is finalized, the Agency has requested that the States submit their priority rankings applying the HRS. After the Agency receives the State submissions, it will develop the NPL and propose that list for public comment. When promulgated, the NPL will be Appendix B to the revised Plan.

The Agency has included a very lengthy and, at times, quite technical discussion in response to the comments on the HRS and NPL. The Agency believes that this extensive discussion is necessary in order to respond to all of the significant public comments which often addressed very technical aspects of the HRS. Many of the comments questioned the data requirements of the HRS with a frequent criticism being that the HRS failed to accurately distinguish between the degree of hazard presented at different releases; the result being that the HRS might give high scores to releases that otherwise should not be included on the NPL.

The role and importance of the HRS and NPL must be kept in perspective.

the NPL, which will include at least 400 releases, is merely the first step in considering a release for Fund-financed remedial response. If a release is included on the NPL but a later remedial investigation discloses the hazard to be less significant than originally thought to be, a decision may be made not to provide Fund-financed remedial response. Similarly, the NPL will be reviewed periodically and a release can be added if more extensive data indicate a more significant hazard at the release.

A. Hazard Ranking System

1. *Overview of the Hazard Ranking System.* As discussed in the preamble to the proposed revisions (47 FR 10975), the HRS is designed to estimate the potential hazard presented by releases or threatened releases of hazardous substances, pollutants and contaminants. Application of the HRS to data from an observed or potential release will enable the Agency to calculate a "score" or estimate of the risk from such release. The HRS score for each release will be used in determining the placement of the release on the NPL.

The calculation of the HRS score for a release analyzes the five potential "pathways" of exposure of the human population or a sensitive environment. Each release or potential release is analyzed for exposure from (1) ground water, (2) surface water, (3) air, (4) direct contact, and (5) fire and explosion. A score will be developed for each of the first three "pathways." Pathways (4) and (5) are used to identify emergency situations that require removal action and, therefore, are not considered in calculating the HRS score.

For each "pathway," the HRS analyzes three categories of "factors" that are designed to encompass most aspects of the likelihood of exposure to a hazardous substance through a release and the magnitude or degree of harm from such exposure. The three categories of "factors" analyzed for each of the three "pathways" reflect: (1) The existence or likelihood of a release, (2) the characteristics of the hazardous substances that have been or may be released, and (3) the population or sensitive environment that is threatened. In the HRS, the first category of factors includes three subsets of factors, one for an "observed" release and, as an alternative when no release has been observed, two for assessing the likelihood of a release, designated as "route" and "containment" factors. For purposes of discussion, they will all be considered as part of the first of the three categories of factors. Each of the three categories may have a number of separate "factors" that will each receive a numerical value according to a set scale for each factor. For example, under category (2), factors that would be analyzed and given numerical values would include the toxicity, persistence, and quantity of the hazardous substance.

After numerical values are assigned to each factor, the HRS uses mathematical formulas, chosen to reflect the relative importance and interrelationships of the various factors to calculate a final score. Those formulas combine the numerical values of all "factors" in a category, then combine the three categories within each "pathway," and finally, combine the three pathway scores to yield a final score for the release or potential release. Therefore, the HRS score represents, for each release or potential release, an analysis of the probability and magnitude of harm to the human population or sensitive environment from exposure to hazardous substances as a result of contamination of ground water, surface water, or air.

2. *Response to Comments.* Commenters generally supported the HRS in its structure of "pathways" and "factor" categories, and the mathematical calculations for approximating the relative potential hazard. Thus, the HRS as promulgated today remains fundamentally the same as the proposed HRS. However, commenters did raise significant issues and suggest changes that are addressed below. General comments and responses are contained in subsection (a). Specific comments on the three "factor" categories are arranged according to each category and are addressed in subsection (b).

(a) *Response to General Comments.* (1) *Cost and Availability of Information.* Several commenters maintained that the data required by the HRS to score releases can be very expensive and will slow the remedial action process for many releases. Other commenters argued that some of the data required would not be available. Other commenters suggested that more factors should be considered or that existing factors should be considered in a higher level of detail.

As these conflicting comments indicate, the amount of information to be collected must be balanced against the cost and time required to obtain that information. EPA anticipates that several thousand releases may eventually be evaluated for inclusion on the NPL. The number and type of factors in the HRS must be consistent with the costs of data collection, the large number of releases, and the resources available for implementing the program. The Agency's experience with the Interim Priorities List indicates that the HRS data requirements, after some adjustments, are adequate without being unduly burdensome or costly.

EPA agrees that some of the data required by the proposed HRS may not be readily available. In developing the HRS, the Agency has excluded a number of factors, such as "bioaccumulation," because sufficient information is not currently available. The Agency believes that adequate information exists or can be obtained for each of the remaining factors in the three "factor" categories in the HRS.

Some commenters suggested that such non-technical factors as political concerns, community and socio-economic interests, and previous-response actions should be included in the HRS.

The Agency has not included such non-technical considerations in the HRS. Section 105(8)(A) of CERCLA requires the establishment of priorities in light of the relative potential hazard to public health, welfare and the environment, and the HRS is designed to estimate this relative hazard, rather than assess the above subjective factors. However, the Agency may consider community interests and socio-economic factors in determining the appropriate remedial action for releases once they are included on the NPL.

The Agency does not believe that previous response actions should be taken into account in scoring a release. The HRS makes clear that releases are scored on the basis of conditions that existed prior to any response actions. Allowing partial response to affect the score would be a disincentive for public agencies to undertake any clean-up action because Federal funding for full-scale clean-up might not be available. In addition, if responsible parties have undertaken partial or temporary clean-up actions prior to scoring, releases might be excluded from the NPL without sufficient consideration of the need for further action or permanent remedy.

A number of commenters maintained that the HRS promotes the listing of releases with known quantified data, to the detriment of releases where analysis has not been performed.

As discussed above, EPA has tried to minimize the information required for the HRS, so that releases which have not been extensively investigated are not eliminated from the system. However, the HRS does include minimum data requirements. The

alternative would be to score releases on the basis of inadequate information, or to wait until extensive information has been generated for every release. It would be difficult to develop a system that provides a meaningful comparison between releases where information has been collected and releases where little is known. The requirement of section 105(8)(A) of CERCLA to list national priorities will not be met if EPA waits until extensive information has been generated for all releases. Releases for which the minimum data required for HRS scoring do not exist can also be addressed in revisions of the NPL, after adequate information has been collected for these releases.

Some commenters expressed concern that some of the scientific literature referenced in the HRS had not been subject to rigorous peer review.

The scientific literature referenced in the HRS was taken from scientific literature available for public review and scrutiny. In addition, the rating factors have been reviewed by the States, the EPA regional offices and the general public as part of the rulemaking. In developing the HRS, the Agency evaluated additional scientific literature and selected that literature that it believed to be the most appropriate and scientifically sound.

(2) *Pathways.* One commenter suggested that the HRS should be designed so that releases with scores for a particular "pathway" (i.e., ground water, surface water, or air) that exceed a designated threshold are automatically given higher placement on the NPL, or are subject to further analysis.

The Agency believes that the HRS is adequately designed to accommodate situations where a release has a high potential for contamination through a single pathway. The scoring formula of the HRS ensures that if only one pathway is rated with a high score, the HRS score could still be sufficiently high that the release could be included among the highest priorities. Using a designated threshold, as suggested by this comment, would also accomplish this objective. However, EPA does not believe this is necessary and the existing process for aggregating all factors to obtain the score for a relase more accurately reflects the situation at a particular release.

One commenter objected because the HRS gives equal consideration to the air, surface water, and ground water pathways, arguing that ground water contamination has broader implications, is more costly and difficult to clean up, and lasts much longer.

Under the revised HRS, the highest possible score, representing worst case incidents, is the same for each pathway. The Agency does not believe that it can discriminate between the very serious hazard resulting from contamination of ground water or any other pathway.

(3) *Other comments.* Several commenters pointed out that the HRS is not adequate to serve as the basis for making management decisions concerning Fund expenditures for remedial action.

The HRS is designed to rank releases on the basis of hazards presented by each release. However, the HRS is not the sole tool for making Fund management decisions. Decisions concerning Fund expenditures for particular projects are also based on further technical information derived from remedial investigations and cost estimates based on feasibility studies and state assurances (see section 300.67). All of this information must be compiled before a decision can be made that a release on the NPL warrants Fund-financed remedial action.

A number of commenters objected because the HRS was not published in the Federal Register. Some argued that the HRS was therefore unavailable for public review and comment.

Section 300.65(d) of the proposed NCP specifically referenced the HRS as the basis for the detailed methods and criteria for ranking hazardous substance releases. The Agency included an address where the HRS could be obtained upon request and solicited comment on the HRS. The substantial comment submitted on the HRS refutes any argument that it was unavailable for public review and comment.

Some commenters objected to what they termed premature publicity on releases when the releases are being analyzed and compared for inclusion on the NPL.

The Agency agrees that premature publicity should be avoided when possible. The process of ranking and selecting releases necessarily involves some degree of publicity because the States are encouraged to involve the public in their selection process. Publicity is also, to some extent, unavoidable because the NPL will be proposed in the Federal Register prior to final promulgation.

Some commenters were concerned that the HRS could be manipulated to place certain releases in a higher priority position than justified.

The Agency has instituted a training program for EPA regional offices and States designed to ensure proper application of the HRS, and developed a quality assurance program to review the scoring of releases prior to preparing the NPL. These measures, together with the intent to propose the NPL for comment, are intended to minimize any inconsistencies in scoring or attempts to manipulate the HRS.

(b) *Response to Comments on the Three "Factor" Categories.* (1) *Category 1: Observed Releases or Likelihood of Threatened Releases.* Several commenters asserted that the approach to assigning single scores to "observed" releases is inappropriate because the frequency and quantity of releases are not considered. Commenters argued that a one-time or minor release would be treated as equivalent to a frequent chronic source of release.

The score for an observed release indicates that the likelihood of a release is 100%. The fact that some substances have been released is a good indication that substances at the site can escape and increases the likelihood of a more substantial subsequent release. Data on frequency and quantity of an actual observed release, and data necessary to determine that a release is a minor occurrence rather than a frequent problem, would require standardized long-term monitoring to establish representative concentrations. This would add inordinately to the cost and time needed to score releases. The extent of the release is more appropriately considered during subsequent investigations.

Several commenters stated that releases should not be treated as observed releases if they are within regulatory limits. For example, air emission rates should be compared to emission rates permitted for operating facilities.

The Agency believes that permitted releases of pollutants are not analogous to uncontrolled releases of hazardous substances. First, the actual pattern of nonpermitted releases generally will not be regular or predictable and the observed release used for scoring may be followed by more substantial releases. Continuous or frequent monitoring would be necessary to establish the long-term level of release. Second, emission or effluent limits do not necessarily represent levels which cause no harm to the public health or the environment. These limitations are frequently established on the basis of economic impacts or achievability. Therefore, releases are treated as observed releases whenever hazardous substances, pollutants or contaminants have escaped from a facility.

One commenter suggested that the existence of a release should be measured in the aquifer of concern.

EPA agrees with this comment and has clarified the directions in section 3.5 of the revised HRS, concerning "Targets for the Ground Water Migration Route." The same "aquifer of concern" must be used for all rating factors, so that if a release is observed in any specific aquifer, this aquifer must be used to identify "target" populations as well.

Several commenters argued that qualitative evidence of release, such as objectionable taste in water, should not be equated with quantitative evidence of release, such as measured presence of substances.

The HRS now requires more conclusive evidence to demonstrate the existence of an observed release. Generally, only analytical measurements are acceptable as evidence of an observed release. Qualitative evidence of releases justifies a score for an observed release only if there is conclusive evidence to confirm that a release has occurred at the facility.

Several commenters suggested that the HRS should give greater consideration to the mobility of hazardous substances. A few commenters specifically suggested that the lack of mobility of heavy metals in soil should be taken into account in estimating the likelihood of release.

The HRS considers mobility by assessing the physical state (i.e., whether liquid, gas or solid) of the hazardous substance and assigning the highest value for liquid substances and the lowest value for solid substances. This factor is now considered under the HRS's designation of "route" factor, designed to estimate the likelihood of a release. The Agency does not believe that it is feasible to include other factors reflecting mobility in the HRS. The level of scientific understanding of the transport and fate of hazardous substances in the environment is not adequately developed to justify estimates of the likelihood of a release without an expensive and extensive data collection effort. For example, to determine the mobility of metals at a particular facility, extensive data collection and analyses of the soils and leachate are necessary. EPA believes that these analyses would add inordinately to the cost and time required to collect data, without significantly improving the ability of the HRS to predict the likelihood of release. Other factors which might affect mobility, such as solubility and volatility, have been deleted from the HRS because of insufficient information, and because the information that is available applies only to pure compounds not normally found at hazardous waste releases.

A few commenters objected to designating as "liquid" the physical state of liquids in wastewater treatment ponds regulated by NPDES permits or by RCRA.

The Agency has determined that spills and one-time or continuous accidental releases of untreated or partially treated substances from these facilities may be addressed under CERCLA. Higher values are assigned to liquids because they are more likely to migrate from the facility. If releases from such facilities are scored, there is no reason not to treat liquid hazardous substances as "liquids." If the substance is well controlled because the facility is well operated, the release will receive a low numerical value for the "containment" factors.

Some commenters objected because the HRS does not include geochemical removal mechanisms, such as sorption and coprecipitation, that remove metals and radiochemical pollutants from migrating ground water.

EPA believes that the data base regarding these mechanisms is not sufficiently broad to warrant inclusion in the HRS. If it is shown that these mechanisms will prevent migration of substances at a facility, this fact will be taken into account in determining the need for response action at a particular release.

Some commenters argued that the HRS should provide for scoring the potential for a release to the air.

The HRS has not been changed in this respect. There must be an observed release, rather than a potential release, in the air pathway. Definitive characteristics could not be established for air migration because existing data bases were inadequate. Air releases must currently exist, must be measured, and must not be caused by disturbances from investigations.

One commenter suggested that gases not be considered under the ground water pathway.

EPA disagrees because many gases are soluble in water and therefore may migrate to ground water with leachate from a facility.

Finally, the HRS now provides that, in determining net precipitation to identify the potential for leachate generation at a facility, seasonal rather than annual data may be used when available. In some regions of the country, seasonally heavy rainfall may increase the likelihood of leachate generation, even if net precipitation is low when measured on an annual basis.

(2) *Category 2: "Waste" Characteristics.* Most of the comments on the waste characteristics category of the HRS concerned two issues: toxicity and persistence, and quantity of hazardous substances. (The HRS uses the term "hazardous waste" and "waste characteristics." These terms encompass all hazardous substances that are covered by CERCLA section 101(14) and allow for including those substances meeting the definition of pollutant or contaminant in section 104(a)(2).)

(i) *Toxicity and Persistence.* Some commenters argued that the range of numerical values (generally zero to three) that can be assigned to a factor is too narrow to realistically rate relative toxicity because of the differences among the many substances.

In developing the HRS, EPA reviewed many rating schemes and determined that rating schemes using high, medium and low ratings function in a satisfactory manner for the purposes of the HRS. Releases will be scored on a large number of factors and distinctions among releases will emerge after consideration of all factors.

A number of commenters disagreed with the use of the Sax rating system for chronic effects. They suggested that the HRS rate only acute toxicity because of the lack of recognized authority on chronic toxicity effects. In addition, some commenters suggested that values derived from acute toxicity tests should be applied to identify and classify toxicity values for the HRS.

The Agency believes that the HRS appropriately considers chronic effects. Most exposures to hazardous substances via air and water exist at low levels and extend over a long period. In addition, most projected health effects are chronic. These effects may contribute significantly to the potential hazard of releases to public health and the environment. An in-depth search was made of the scientific literature and state-developed systems to find alternative methods of incorporating acute and chronic toxic effects in the HRS. No system has been identified as a suitable alternative to the rating system developed by Sax. Alternative scoring methods suggested by commenters have been carefully studied and ruled out for reasons including inapplicability, complexity, and expense of application. Exclusive reliance on acute toxicity testing is not appropriate because a system is needed for both acute and chronic values.

Some commenters maintained that the score for the factor evaluating the degree of hazard of substances at a release should not be based on a

substance that is present only in miniscule quantities.

The HRS provides that the score for the factor evaluating the degree of hazard of substances at a release, rated by toxicity and persistence, is based on the most hazardous substance at the release. The HRS has been revised so that if information is available on the amount of the substance present, the hazardous substance used to evaluate the degree of hazard must be present at levels at least equal to the reportable quantities established under section 102 of CERCLA.

Some commenters objected to the fact that the HRS determines degree of hazard by scoring the most hazardous substance that is not adequately contained. Thus, a facility with waste containing only a small proportion of an extremely hazardous substance could score the same for degree of hazard as a facility with waste containing a very high proportion of that substance.

The Agency does not believe that it is possible to require a detailed analysis of the relative proportion of different types of hazardous substances at a facility without inordinate expense and delay. Representing the hazards at facilities on the basis of the most hazardous single compound present will generally provide an adequate evaluation of the relative hazards.

A number of commenters argued that concentration of hazardous substances should be considered in rating toxicity, so that the toxicity of a substance is measured at the point where impacts on human health or the environment actually occur.

The Agency's position is that concentration data on long- or short-term levels are frequently unavailable, controversial, and costly to obtain. Experience in sampling and monitoring programs has shown that actual measurements at different locations of a release may vary considerably. The determination of a representative concentration would require repetitive or continuous monitoring over a long period of time, using the same protocols at all releases to generate comparable data. In addition, the points of human contact vary for each release or potential release. The HRS does assign lower values to target populations that are further from the release; however, EPA does not believe that it is necessary to expend a large portion of the Fund to collect data simply to determine precisely the relative potential risk of a release on a national scale.

Several commenters proposed that a bioaccumulation factor should be added to reflect the fact that some chemicals are stored and accumulated in body tissue.

EPA has investigated the use of bioaccumulation and found that there is no measure of bioaccumulation potential with readily available data that would enable EPA to inlcude this factor in the HRS.

Finally, the HRS now combines toxicity and persistence in a matrix, and the scale has been changed so that their combined value equals zero when toxicity equals zero, regardless of persistence. The change was made for simplicity and to facilitate application of the HRS.

(ii) *Hazardous Substance Quantity.* A number of commenters argued that hazardous substance or "waste" quantity should be part of the assessment of the nature of the substance and that treating quantity as a separate category serves to bias the HRS so that large quantities of low hazard substances score high.

The Agency agrees with this comment. Accordingly, quantity has been changed into an additive factor under "Waste Characteristics," thus reducing its significance to the overall score. In addition, the HRS instructions have been clarified to specifically exclude contaminated soil and water from determinations of hazardous substance quantity.

A number of commenters stated that the HRS is designed to address those releases which have 2,000 or more drums of hazardous substances.

The Agency has changed the HRS so that it no longer requires any minimum quantity of hazardous substances, unless the substances are not present in reportable quantities.

Some commenters maintained that the quantity of substances used to rate the waste quantity factor should be calculatd by multiplying the concentration of hazardous substances by the total quantity of hazardous and nonhazardous substances at the facility. Some suggested that, if the concentration of hazardous and nonhazardous substances at a facility is known, then the waste quantity factor should be determined by only the quantity of hazardous substances at the facility.

The Agency believes any method to identify actual quantities of hazardous substances at a facility must take into account the fact that nearly all substances contain some portion of non-hazardous materials. The Agency has considered several alternative methods and has been unable to develop an internally consistent approach for comparing pure hazardous substance quantity at facilities where definitive information is available with hazardous substance quantity at facilities where such information is not available. Therefore, the HRS remains unchanged and waste quantity is calculated according to the total amount of substances at a facility.

(3) *Category 3: "Target" Population and Sensitive Environment That Is Threatened.* The "target" category consists of factors for estimating the magnitude of the threat to affected populations or sensitive environments potentially exposed to the release. Comments generally addressed three areas: exposure from contaminated ground water, use of water resources, and the sensitive environmental factor.

(i) *Exposure from Contaminated Ground Water.* The method for determining the population potentially exposed to ground water contamination is to estimate the number of people living within a three-mile radius. Some commenters maintained that the actual population that is potentially exposed should be identified where information exists to show that these estimates do not reflect the actual exposed population. They also argued that the HRS should allow consideration of hydrogeologic information on ground water flow direction and natural in-place geologic barriers between shallow and deep aquifers.

The population within a three-mile radius of the facility is still considered the potentially exposed population under the revised HRS. Determining the extent of population actually exposed or threatened by using ground water flow information is generally not practicable. In many instances the information is not available, and in others the flow direction varies. Even where there is extensive knowledge of geohydrology, interpretation is nearly always subject to dispute. Requiring a precise measure of the affected population would add inordinately to the time and expense of applying the HRS. Provisions for limiting the area of concern based on flow are not included in the HRS, because of the lack of reliable data on direction of flow and because the direction of flow frequently varies. The HRS does require that the same aquifer used to identify a release must be used in determining the potentially exposed population. In addition, geohydrological data on known aquifer interruptions may be used to show that potential targets which are located within three miles do not draw from the affected aquifer.

Some commenters objected on the basis that the three-mile radius is excessive in comparison to the area

designated by EPA under the underground injection program.

The area of review in the Safe Drinking Water Act's Underground Injection Control (UIC) program, however, refers to that area within which existing wells, because of increased formation pressure caused by injection activity, might allow the movement of fluids between formations. It does not refer to any estimate of how far contaminants may travel. The three-mile radius used in the HRS is based on EPA's experience that, in most cases currently under investigation, contaminants can migrant to at least this distance. It should be noted that no commenters disagreed with the selection of three miles for technical or scientific reasons.

Some commenters asserted that, when determining the nearest well, it is not appropriate to assume that houses or buildings near a facility have wells that draw from the aquifer of concern.

The Agency agrees and has changed the text under "Populations Served by Groundwater" (Appendix A, section 3.5) to require more definitive evidence of ground water use. People within three miles who do not use water from the aquifer of concern are not to be counted.

A number of commenters suggested that the HRS should consider the dilution of contaminants by the environmental media since it is the concentration at the probable point of exposure that is of concern.

The HRS has been designed to consider environmental dilution of released hazardous substances by lowering the score of populations potentially exposed as their distance from the hazardous substance increases. A sophisticated analysis of attenuation would require information that is not readily available for most of the releases that should be considered for the NPL.

Finally, the HRS now combines the distance to the nearest well and the population served by ground water into a matrix to provide greater discrimination of scores. The combined value equals zero when either the population served equals zero or the distance to the nearest well is greater then three miles (see Appendix A., section 3.5).

(ii) *Use of Water Resources.* Some commenters maintained that, when considering an aquifer of concern, the HRS should distinguish between aquifers in use, not used, or unusable.

Section 3.5 of the HRS addressing "Targets for Ground Water Use" has been changed, so that points are not assigned for aquifers that are unusable for reasons such as extreme salinity or extremely low yield.

Some commenters felt that the HRS should contain a provision for considering industrial use of ground or surface water which may affect the extent of exposure.

The Agency agrees and has elevated the value for water used for commercial food processing. Though less hazardous than direct consumption of drinking water, this use warrants a higher value than provided in the previous version of the HRS.

A number of commenters suggested that the HRS ratings should consider future use of resources.

The Agency considered ways of addressing future uses, but was unable to develop or identify a mechanism to objectively measure future use. The Agency concluded that attempting to assign numerical values to future uses would be too speculative.

Several commenters asserted that food chain exposure to hazardous substances should be considered in the HRS.

While the food chain is not treated as a separate pathway of exposure, food chain contamination is specifically addressed in rating factors for water use, land use, and the target population exposed to potentially contaminated water through irrigation.

(iii) *Sensitive Environment Factor: The Distance to a Sensitive Environment.* Category 3 includes a factor for assigning a numerical value based on the distance from a hazardous substance release to a sensitive environment, such as wetlands or the critical habitats of endangered species.

Some commenters maintained that the factor assessing the distance from a release to a critical habitat of an endangered species should assess the distance to the "range" of an endangered species, not just the critical habitat. Other commenters suggested that national wildlife refuges should be added to the environmental factor in addition to critical habitats.

The Agency believes that the concept of "range" for endangered species is much too broad to be used in the HRS. The majority of potential exposures of endangered species within their range would be temporary in nature and would likely have little effect on their safety. The Agency has modified the environmental factor to include national wildlife refuges as a sensitive environment.

Several commenters proposed that the environmental factor representing the distance to a wetland should be refined to differentiate between wetlands along streams at high flow conditions and streams at stagnant flow conditions.

The Agency has not made this change because of the difficulties in predicting the transport and fate of hazardous substances and estimating the potential damage based on stream flow rates.

Some commenters argued that flood plains should not be equated with critical habitats in the sensitive environment factor.

EPA agrees because flood plains may accommodate a wide range of activities instead of, or in addition to, serving as critical habitats. The reference to flood plains has been deleted from the sensitive environment factor.

A number of commenters objected to the fact that the HRS assigns the highest score for the factor "distance to a sensitive environment" when a facility is within ¼ mile of federal reserved lands, regardless of how well the facility is constructed. The commenters suggested that this provision reduces the availability of such areas for new facility siting.

The HRS is not used to rank prospective sites for future hazardous waste disposal facilities. Any facility located in such an area that is well constructed and maintained will rank very low due to other factors in the HRS.

Some commenters suggested that a sensitive environment factor should be added to the list of potential targets of ground water contamination. The HRS only includes the sensitive environment as a factor for the surface water and air pathways.

When contaminated ground water is released or flows into surface water, it is considered under the surface water pathway. The Agency is unaware of any serious impacts on sensitive environments due exclusively to ground water pollution. As a result, it is not necessary to add a separate rating factor under the ground water pathway, since sensitive environments are addressed under the surface water pathway.

Finally, a general comment made by several commenters was that there are inconsistencies in the methods used to assign numerical values to the different factors.

The Agency believes that the conditions represented by rating factors in the HRS are not equally important in the evaluation of a hazardous situation. Accordingly, the rating factor scales are intentionally different and multipliers have been chosen based on professional judgment and experience concerning the relative importance of each factor. The selection of scales and multipliers has been confirmed by the consistency of

scores with the perceived hazard at releases.

B. National Priorities List

The most significant comments on the provisions governing the NPL (§ 300.66 (d) and (e)) requested: (1) Clarification of criteria used for including releases on the NPL; (2) explanation of the relation of the NPL to remedial actions; (3) inclusion of procedures for adding and deleting releases from the NPL; (4) deletion of the requirement for State assurances at the time the releases are submitted to EPA; and (5) clarification of provisions for adding State top priority releases to the NPL. The following sections discuss these comments and explain the Agency's changes in response to these comments.

1. *Criteria for Including Releases on the NPL.* Some commenters indicated that it is not clear whether the Plan provided that inclusion (ranking) of a release or "site" on the NPL would be based on the purely "mathematical" factors included in the HRS, or whether other factors will also be considered.

The HRS was developed pursuant to section 105(8)(A) of CERCLA. This section provides for development of criteria and priorities based on relative risk or danger to public health or welfare or the environment, taking into account the following considerations: (1) The population at risk, (2) the hazard potential of hazardous substances at such facilities, (3) the potential for contamination of drinking water supplies, (4) the potential for direct human contact, (5) the potential for destruction of sensitive ecosystems, (6) State preparedness to assure State costs and responsibilities, and (7) other appropriate factors. The HRS was designed to take into account only those aspects of the above considerations (generally, considerations (1) through (5)) that reflect the risk of harm existing at releases and that can be quantified for inclusion in a mathematical model. Once an HRS score has been assigned, the additional factors referenced in section 105(8)(A) will be considered in selecting releases for the NPL, and in selecting releases from the NPL for Fund-financed remedial actions. This process is set forth in Subpart F of the NCP.

Other commenters argued that releases which may present the sufficient degree of risk to be placed on the NPL should nonetheless be excluded if CERCLA does not authorize Fund-financed response. One example is the provision in section 111(e)(3) precluding use of Fund money for remedial action with respect to "federally owned facilities."

The Agency has decided that where available data indicates that active Federal facilities are the source of a release (either inside or outside the facility), these facilities will not be included on the NPL.

2. *Role of the HRS in Selecting Releases from the NPL for Remedial Action.* Many commenters maintained that the HRS does not provide sufficient detail to distinguish among releases for the purpose of deciding when to take remedial action, and therefore all releases on the NPL should be equally eligible for remedial action. Several others stated that, all other factors being equal, releases with a high HRS score should be given a higher priority for remedial action.

The NPL identifies releases that are eligible for remedial action and the relative risk as calculated by the HRS. The actual selection of sites for remedial action depends not only on relative risk but also on the availability of cost-sharing and other State assurances, the existence and status of responsible parties, the status of enforcement actions, and other considerations included in Subpart F of the Plan. In addition, remedial investigations or feasibility studies might produce more precise information that affects the urgency of remedial action. The Agency will therefore not necessarily respond to releases in order of their HRS scores.

3. *Adding and Deleting Releases from the NPL.* Several commenters suggested that the Plan should explicitly provide that the NPL will be updated at least annually as required by CERCLA section 105(8)(B). Other commenters suggested that the Plan should explain the process by which a release can be removed from or added to the NPL after the initial publication of the NPL. Specific grounds suggested by commenters for deleting releases from the List included: (1) The existence of a Federal agreement for clean-up by private parties; (2) a more sophisticated assessment of risk; and (3) voluntary remedial actions that may reduce the release's NPL ranking.

EPA has added to the NCP a provision (§ 300.66(e)(7)), stating that EPA will revise the NPL at least annually. The criteria for adding releases to the NPL are the same criteria for including releases on the initial List. Additions will be made consistent with the process in § 300.66(e) for developing the initial List. The Agency has not included criteria for deleting releases from the List. At this time, EPA did not believe that it had the necessary experience to establish a procedure in the Plan for removing releases from the List. In guidance issued on June 28, 1982, EPA indicated conditions when it might remove releases from the NPL. If, after EPA and the States acquire experience in working with the NPL, it becomes necessary to establish such a procedure in the Plan, EPA will propose the necessary modifications.

4. *State Assurances.* Section 300.65(e) of the proposed revisions to the NCP required States, when submitting releases for inclusion in the NPL, to indicate in a letter of intent either their ability to make the assurances for cost-sharing, future maintenance, and disposal site availability as required by section 104(c)(3) of CERCLA, or their intention to make those assurances at the appropriate time. Many States objected to the requirement to make assurances at this early stage in the process. They argued that States are in no position to make these assurances when submitting releases for inclusion on the NPL, because the appropriate extent of remedy, the types and amounts of wastes that require off-site disposal and the amounts of money needed to fulfill these assurances are uncertain. States also argued that they should not be required to provide assurances at a stage when EPA has not committed to providing funds for remedial action on a site.

EPA has reconsidered this requirement in light of the public comments and has decided to eliminate the requirement for assurances when releases are submitted for inclusion on the NPL. There will be sufficient time before remedial actions are initiated for the States to provide the necessary assurances.

5. *State Priority Submissions.* Several commenters suggested that EPA should clarify the provision for States to identify their top priority release. One commenter requested that EPA explicitly acknowledge that the State's top priority release need not be the top ranked under the HRS.

Section 300.66(d)(3) provides that each State may designate a release as the State's highest priority release by certifying that the release presents the greatest danger to public health, welfare and the environment among known releases in the State. The State's highest priority release does not have to be the State's highest ranked release under the HRS.

One commenter indicated that releases should be included on the NPL at the initiative of States, and that EPA should include releases only after consultation and general agreement with the States.

The great majority of the releases considered for inclusion on the NPL will

be at the initiative of the States. EPA has the authority, however, to add releases where necessary to assure that the NPL reflects, to the extent possible, the releases presenting the greatest risk or danger to public health, welfare and the environment. Section 300.66(e)(1) provides that States' priorities will be reviewed and consolidated by EPA into the NPL, and that EPA may add, in consultation with the States, any additional priority releases known to EPA.

VI. Comments Regarding Planned Removal

In the preamble to the proposed revisions, EPA explained its reasons for delineating two categories of removal actions—"immediate" and "planned" (47 FR 10975). This delineation was intended to specify those circumstances when the Agency believed it would be appropriate for the Fund to finance a removal action. The delineation neither authorized response actions beyond the statutory definitions of removal, nor improperly restricted the types of removal actions authorized by the Act.

Many commenters felt that the proposed description of planned removals was confusing and not adequately explained. Other commenters expressed concern that the criteria for taking a planned removal were too broad or undefined and did not adequately differentiate planned removal from immediate removal or remedial action. In order to more clearly delineate those situations in which planned removals may be taken and the purposes for which this category of response is intended, EPA has modified § 300.67.

Section 300.67(a)(1) allows for planned removals when the conditions for terminating an immediate removal exist, yet a substantial cost savings can be realized by completing the action and not demobilizing equipment and resources. EPA believes that such response flexibility is needed to ensure the effective use of Fund money and to achieve the greatest amount of protection of public health and the environment with the funds available. This category will be used to respond to releases at which a small amount of work is necessary to complete clean-up at a release, thus avoiding the high costs of demobilizing equipment only to mobilize again for a continued response. In addition, § 300.67(a)(2) allows action at a release that is not on the National Priorities List and that does not meet the criteria for an immediate removal, yet poses a risk to public health or the environment that requires action before the release could be added to the National Priorities List for remedial action.

Some commenters questioned whether planned removals were needed at all, or whether the statutory categories of removal and remedial action could suffice.

Immediate removals are intended for response to situations of immediate and significant harm to human life or health or the environment; these are emergency situations which require rapid immediate response. Other situations also exist which require an expedited response, but not an immediate one. In these situations, more deliberation can be given to planning the response action. The statutory category removal action covers both of these situations. By making this distinction between immediate and expedited response, the Plan provides for better management of the Fund.

Section 300.67(b) requires that any request for a planned removal be made by the State governor or his or her designee. This request must include relevant information about the release and assurances for cost-sharing. Many commenters questioned EPA's proposal to require State cost-sharing for planned removal actions. Commenters felt that States would not have sufficient funds to meet these requirements; that such a requirement would delay response action unnecessarily; and that CERCLA did not authorize requiring State cost-sharing for removal actions.

EPA has chosen to require cost-sharing for planned removals, in exercise of its discretion under the statute and EPA grant regulations (discussed in Section IV above), for a number of reasons. First, such cost-sharing provides evidence that the State is committed to removal action at the site in question, and has made the determination that action is needed to prevent a significant risk to public health or the environment. Second, the statute provides for and encourages an active State role in selecting the releases that require response and in sharing the costs of response. This requirement contributes to effectuating the State role under CERCLA. The NCP section on planned removals provides for both aspects of this role. Planned removals will only be undertaken if the State governor or his designee requests such action. Therefore, the Plan now gives the States a high degree of flexibility in selecting their own sites for receiving Federal money. The request for planned removal, however, must be accompanied by a plan for the removal action and by assurance that the State will help in the funding of the action. Finally, although situations appropriate for planned removals require expedited action, EPA believes that there will be sufficient time before taking a planned removal to arrange for cost-sharing with the affected State without causing delay in response.

Several commenters noted that it would be contradictory to require a State to submit a planned removal site for the National Priorities List, since there would be no point in listing a release as a priority after it had been cleaned up.

EPA has consequently eliminated this requirement. Other commenters noted that the provisions of § 300.66 of the proposal were inconsistent at several points: for example, in requiring a planned removal action to minimize and mitigate damages without relying on future response actions, while also emphasizing actions which are consistent with any subsequent remedial activities. EPA has therefore eliminated these provisions. EPA has also eliminated from this section the requirement that pollution reports be submitted, since the requirement that OSCs submit these reports is already included in Subpart C.

To fulfill the mandate of CERCLA section 105(3), EPA has added considerable detail to the section on planned removals pertaining to the appropriate extent of planned removal action. The Plan now delineates the types of situations in which planned removal action may be appropriate (§ 300.67(a)), the criteria for taking planned removal action (§ 300.67 (a) and (c)), and the criteria for terminating a planned removal action (§ 300.67(d)). The Plan reiterates the statutory limitation in CERCLA on the time period and dollar expenditure allowed for removal action except under certain specified conditions.

VII. Comments and Modifications Relating to Individual Subparts

This section responds to additional comments (not discussed above) and explains other changes made to each subpart of the Plan as a result of comments.

A. Subpart A

Several commenters noted that § 300.3 of Subpart A merely repeated the statutory requirements for the NCP's content. Other commenters suggested that, instead of this repetition, the Plan should clearly delineate its coverage.

EPA agrees and has replaced the list of statutory requirements in the Plan with a new § 300.3(a) which specifies the scope of Federal response

authorities under Section 311 of the CWA and under CERCLA. In addition, EPA has added a new paragraph (b) to this section which summarizes the scope of the Plan's provisions. This summary more accurately reflects the coverage of the Plan.

Many commenters suggested modifications to the definitions in § 300.6. In most cases, the suggested modifications pertained to definitions that were taken directly from the Clean Water Act or CERCLA, and modification was deemed unnecessary.

Several commenters noted that it was unclear that the definition of "size class of discharges" in § 300.6 referred only to discharges of oil. EPA has modified the definition by changing the undefined term "pollution" to "oil discharges" and stating explicitly that it means discharges of oil only. It is noted that the term "discharge," as used in the Plan, applies only to oil.

Other commenters suggested that the Plan establish size classes for releases of hazardous substances. Most of the commenters were concerned that reporting requirements under CERCLA were too stringent and could lead to reporting of insignificant releases.

EPA does not believe it is appropriate to establish in the Plan general size classes for releases of hazardous substances, since the quantity of a hazardous substance is not always indicative of its toxicity. Small quantities of one hazardous substance may be more toxic and present a more significant threat to human health than greater quantities of other hazardous substances. CERCLA establishes reporting requirements for releases of hazardous substances and authorizes EPA to establish specific reportable quantities for releases of all hazardous substances. Until such time as EPA develops regulations revising reportable quantities, section 102(b) of CERCLA assigns a reportable quantity of one pound to substances defined as hazardous by section 101(14) of CERCLA, with the exception of those substances for which reportable quantities have been established pursuant to section 311(b)(4) of the Clean Water Act. For the above stated reasons, the Agency believes that it is neither appropriate nor necessary to establish size classes of releases for hazardous substances in the Plan. Definition of reportable quantities is not a requirement of section 105 of CERCLA. Rather, the Agency has initiated separate proceedings to address this matter as required by section 102 of CERCLA.

A few commenters noted that the definition of "coastal zone" contained in the Plan differs from that under the Coastal Zone Management Act (CZMA) and questioned whether it should be consistent. The definition included in the Plan specifies that it is to be used only "for the purpose of this Plan." This term is used in the Plan for the sole purpose of distinguishing between EPA and USCG jurisdictional areas for response activities. Accordingly, it need not be consistent with the CZMA definition.

One significant modification to Subpart A is in response to comments that specific decision-making responsibilities in the Plan should be clarified. Commenters noted that the use of the terms "lead agency" and "on-scene coordinator" (OSC) referred only to Federal officials, to the exclusion of State officials, and that the term "lead agency" was unclear. EPA has modified the definitions of "lead agency" and "OSC" to provide that both may include a State agency or official acting pursuant to the terms and authorities granted through a contract or cooperative agreement with the Federal government. This modification acknowledges the important role States may exercise in response actions. The term "lead agency" refers to the Federal or State official that provides the OSC. "Lead agency" is used because several agencies are granted the authorities that will be exercised by the "lead agency" under the Plan. These authorities often extend beyond the authority of an OSC.

To further delineate the responsibilities of OSCs, the final revised Plan includes a provision for designation of a "responsible official" to exercise OSC authority in certain situations. The new term "responsible official" refers to those individuals responsible for undertaking planned removals or remedial actions under CERCLA. The definition includes State officials if the State is granted this authority pursuant to a contract or cooperative agreement. EPA added this term to clarify that, in the case of planned removal or remedial actions, the official in charge may not always be called an OSC. In such long-term actions, the official in charge could be an OSC, but is more likely to be another official of the Federal or State government. Accordingly, this official is defined as a "responsible official" and is given the authorities and responsibilities assigned to OSCs.

Finally, commenters suggested that it was inappropriate to require that volunteers be recruited and trained by the response authority. This provision is simply intended to require that volunteers be competent for the actions for which they are being utilized. EPA has clarified this provision by deleting the words "recruited" and "trained" from the definition of volunteer in § 300.6 and has clarified § 300.25(c) pertaining to volunteers. This modification is discussed below.

B. Subpart B

Subpart B delineates the responsibilities and roles that all levels of government and private entities may play in response activities. Several commenters suggested that § 300.21 detail the delegations given to the various Federal agencies in Executive Orders 12316 and 11735. In addition, several commenters suggested that Subpart B should include an outline of the specific responsibilities and capabilities of Federal agencies under the Plan. A few commenters suggested that additional material on the roles of HHS and FEMA would be appropriate, since they have new response authority under CERCLA.

EPA does not believe it is necessary to include details from Executive Orders 12316 and 11735. Both are referenced in § 300.21 and are readily available to the public. Details from Executive Order 11735 were not repeated in the existing Plan, and experience indicates that there was no misunderstanding resulting from their absence in the Plan. EPA notes that where delegations are germane to the Plan, they are stated in the appropriate context, as in the division of responsibilities between EPA and USCG in response actions noted in § 300.33(a).

In addition, EPA finds it unnecessary to specifically list all the responsibilities and capabilities each agency has to bring to bear in a response action. Responsibilities and capabilities are subject to constant change by statutory modifications and reorganizations and, because of resource constraints, capabilities will vary. EPA believes the Plan appropriately delineates the responsibilities that each agency should fulfill in the context of the national response structure and the potential capabilities of each agency. EPA agrees, however, that the roles of FEMA, HHS and DOD deserve special mention in the Plan. Unlike the section 311 program, in which response authority was vested only in the USCG and EPA, Executive Order 12316 grants certain response authorities to FEMA, HHS and DOD. EPA has added an explanation of the division of responsibilities between EPA, USCG, FEMA, HHS and DOD in a new § 300.23(e).

Section 300.22 of Subpart B requires that, where appropriate, discharges of radioactive materials will be handled

pursuant to the appropriate Federal radiological plan. EPA recognizes that many such incidents may not be covered by authorities under CERCLA or the CWA. The precise extent of response authority under CERCLA has not been determined. Accordingly, any clean-up activity under CERCLA of radioactive releases will be determined on a case-by-case basis. Federal authorities for responding to radiological incidents fall within the purview of several agencies. To assure that the Federal government adequately coordinates these authorities, there are several existing mechanisms and others under development. For radioactive releases from commercial nuclear power plants, Federal emergency response is coordinated by FEMA and the NRC through the National Radiological Emergency Preparedness/Response Plan for Commercial Nuclear Power Plant Accidents (Master Plan), 45 FR 84910. For radioactive releases not associated with commercial nuclear power plants, the Federal radiological assessment and monitoring is coordinated by DOE under the Interagency Radiological Assistance Plan (IRAP). FEMA is preparing a comprehensive Federal plan that will encompass all types of radiological incidents that may require a Federal response. It will include incidents or accidents at commercial nuclear power plants. The tentative title for the new Federal plan is the Federal Radiological Emergency Response Plan (FRERP). The IRAP has been revised and updated by DOE and will soon be republished as the Federal Radiological Monitoring and Assessment Plan (FRMAP). The FRMAP will be incorporated into the FRERP to establish the latter as one single Federal response plan for any type of significant radiological emergency.

Several commenters suggested that § 300.22 (a) through (c), relating to coordination of Federal agency activities, should include the mandatory "shall" rather than "should."

EPA disagrees and notes again that Federal agency responsibilities will vary due to statutory and budgetary constraints beyond the control of EPA as author of the Plan. EPA cannot impose obligations upon these agencies which they may not be able to fulfill. The Plan must be flexible enough to accommodate these changing conditions. Agency budgets and missions are modified annually. Moreover, Interagency Agreements, Memoranda of Understanding, and guidance documents are the appropriate mechanisms for detailed descriptions of tasks each agency will perform.

Several commenters stated that the thresholds contained in § 300.22(d) did not include a "substantial" threat of release as required by statute.

Section 300.22(d)(2) refers to enforcement authority under section 106(a) of CERCLA, rather than response authority under section 104(a) of CERCLA. Section 106(a) of CERCLA does not require a "substantial" threat as does section 104. Due to this difference, no change is necessary.

One commenter objected to the fact that § 300.22(d)(2) allowed the NRT to recommend that EPA or USCG exercise its enforcement authorities, since the NRT is not delegated such authority. EPA agrees and has deleted this provision.

A few commenters questioned the wording of § 300.22(e) stating that it gives a great deal of authority to the government to coordinate private behavior and that terms such as "pollution" and "large" quantity of oil were not defined. This provision is taken directly from section 311(b)(2)(A) of the Clean Water Act. In this section, Congress did not define the referenced terms. In situations requiring the exercise of this authority, decisions must necessarily be subjective since they are based on the unique circumstances surrounding each situation.

Many commenters stated that it was unclear which agencies were "participating" agencies under § 300.23 (a) and (c). EPA has clarified this by deleting the term "participating" agencies in § 300.23 and noting instead that the agencies are the "Federal" agencies listed in paragraph (b) of the same section. The agencies listed in paragraph (b) are the current members of the National Response Team. EPA has deleted HUD and SBA from this list since they are not current members.

One commenter suggested it was preferable to put the requirement that Federal agencies provide representation to the NRT and RRT and assist in formulating regional and local plans in section 300.23(c), in order to include agency responsibilities to the NRT and RRTs in one place. EPA agrees and has added this requirement in § 300.23(c)(3).

To avoid duplication in the Plan, EPA has deleted the second sentence of § 300.24 (d), (e) and (f) and instead added a cross-reference to the new § 300.62 (discussed in section IV above) which more comprehensively outlines the State role under CERCLA.

Some commenters requested State participation in the Regional Response Team be greater and that it be mandatory. Other commenters questioned whether State participation in RRT activities was a reimburseable cost.

Section 300.24 does allow States full membership on the RRT. This membership is not mandatory, however, since States should have the discretion to participate or not participate given State needs and resources. The issue of which costs are eligible is not one that the Plan resolves. Rather, the extent to which costs will be reimbursed shall be specified in individual cooperative agreements with States. Another commenter noted that §§ 300.24(a) and 300.32(b)(2) were contradictory in that § 300.32 allows local governments to fully participate in RRT activities while § 300.24(a) makes local participation contingent upon approval of the State representative. EPA agrees that these sections are inconsistent and has modified § 300.32(b)(2) to provide that only States have the same status as Federal members (i.e. voting members), leaving local participation subject to the provisions of § 300.24(a).

Other commenters stated that the provisions of § 300.24(c) potentially created duplicative State programs and unnecessarily encouraged States to take response and enforcement actions. EPA disagrees. This section merely recognizes that many States have active response and enforcement programs which are in no way pre-empted by CERCLA. Where such programs exist, EPA encourages their use. This section recognizes that such programs and the Federal program are important complements to one another. One commenter stated that the Plan should not indicate a preference for State enforcement action over Federal action. EPA agrees and notes that § 300.24(c) encourages State enforcement but does not indicate a preference over Federal enforcement action.

Other commenters objected to the use of the term "potentially" in referring to responsible parties in § 300.24(c) and elsewhere in the Plan.

EPA used this term in response to comments on earlier drafts of the Plan which raised objections to calling all involved parties responsible until enough evidence was gathered for the Agency to determine that they are responsible. Since this is often a time-consuming process, EPA has used the term "potentially" responsible.

A few commenters questioned whether the Plan adequately specified those actions that would be eligible for Federal funding.

Subpart F establishes criteria upon which decisions as to eligibility for Federal funding will be based. The

eligibility of particular actions will be decided on a case-by-case basis using these factors. The Plan cannot ensure funding approval for specific actions since current demands for response and expected future demands exceed available funds.

Many commenters were confused as to the provisions in § 300.25 (d) through (f). Several questioned when the Fund will be used to pay for private party clean-up, and whether the section prohibits the taking of remedial action by any person who does not have prior approval. Moreover, commenters stated that § 300.25(e) of the proposal implied that anyone who does not intend to seek Fund reimbursement needs no prior approval. Others questioned whether there should be any prior approval requirements.

In response to these concerns, EPA has substantially modified § 300.25 (d) through (f). Paragraphs (e) and (f) of the proposal have been eliminated and paragraph (d) has been rewritten to require that persons who intend to undertake response actions, and seek reimbursement from the Fund, must obtain preauthorization in order for the response action to be considered consistent with the Plan for purposes of section 111(a)(2) of CERCLA. This provision does not apply to the Federal government or to a State or other person acting pursuant to a contract or cooperative agreement.

Section 111(a)(2) of CERCLA allows payment of claims for response costs incurred by "any other person" as a result of carrying out the NCP, *provided* that such costs are approved under the Plan and certified by the responsible Federal official. Section 300.25(d) provides the mechanism for approval of such costs under the NCP. This mechanism is through notice to the Administrator or her designee and submission of an application for prior approval (preauthorization) of the action.

This preauthorization process allows EPA to better manage Fund money, and helps ensure that private response is conducted in an environmentally sound manner. Further, the preauthorization process gives persons who wish to submit response claims a method to assure themselves that their costs will meet the approval component of section 111(a)(2). EPA is developing procedures for processing such claims pursuant to section 112 of CERCLA.

The provision requiring that private response actions be preauthorized is included in the Plan to ensure that Fund money is spent in a cost-effective and environmentally sound manner, regardless of the party taking the action. In the case of those operating pursuant to a contract or cooperative agreement, EPA can assure consistency with the NCP through the agreement. In the case of the Federal government taking Fund-financed action, consistency with the Plan is assured through internal agency approval procedures. Section 300.25(d) imposes a similar advance approval requirement on those wishing to bring a claim against the Fund for response costs in accordance with section 111(a)2). Section 300.25(d) does not apply to private parties who undertake response actions, but do not intend to seek reimbursement from the Fund.

C. Subpart C

Subpart C establishes the national and regional response structure and explains the role of government and private entities in the response structure.

Several commenters requested further detail in § 300.32(a) on the responsibilities and authorities of the NRT. EPA believes this section adequately details the role of the NRT as the national organization for coordinating Federal response to major pollution incidents and developing recommended actions for national response policies. Roles and responsibilities of the NRT during response actions are detailed in § 300.34 (f) and (g). One commenter noted that, while the Plan allows the NRT to make recommendations on training, equipping, and protecting response teams and coordination of governmental and private entities, section 105 requires that such provisions be specified in the Plan. EPA notes that the Plan does specify these components throughout Subparts B and C. The provision regarding the NRT is intended to allow the body to recommend improvements or modifications in these areas, based on its collective expertise.

Some commenters objected to deletion of material from the existing Plan relating to by-laws of the NRT. EPA eliminated these provisions because they were considered "ministerial" and neither necessary nor appropriate in the Plan. Section 300.32(a) allows the NRT to adopt such by-laws as it deems necessary to its operations. Other commenters suggested making provision in the Plan that NRT meetings be open to the public. Again, such a provision is not appropriate in this Plan, since some meetings may be public and others may require executive session. It is more efficient for the NRT to provide for these decisions in its own procedures.

Several commenters asked how membership on the NRT is determined and suggested that the Plan provide for State membership on the RRT. EPA has clarified the membership process by adding a sentence to § 300.32(a)(1) which provides that agencies may request membership on the NRT by forwarding such requests to the chairman. States are not permitted to be members of the NRT; participation is limited to members with a national presence. The RRT is the appropriate coordinative body for States. The NRT likewise restricts Federal agency members to those with a national presence. For example, the Tennessee Valley Authority is a Federal entity that is very active in response activities. It is a member only of the RRT, however, because its activities are limited to a single geographic area.

Several commenters pointed out that the provisions of § 300.32(a)(7)(i) were confusing since they implied that the NRT responds only to nationally significant releases. EPA has clarified this section by providing that the NRT maintains national readiness to respond to incidents which are beyond regional capability. This provision clarifies that the NRT role is complementary to that of the RRT.

Other commenters maintained that the Plan vested broad and unspecified discretionary authorities in the NRT and RRTs. These commenters believed that certain responsibilities vested in the NRT and RRTs should be specified in the Plan. EPA disagrees. The Plan provides the NRT and RRTs with the authority they require to act as effective coordinating bodies. Their activities are not exclusive of the Plan; rather, they are complementary to the Plan. For example, the NRT is empowered to develop procedures for ensuring coordination of response activities among the various levels of government and private entities (§ 300.32(a)(7)(iv)). This authority obviously does not preempt the rest of Subparts B and C which also provide for such coordination. This section is simply one of the many provisions in these subparts to assure such coordination.

Several commenters were confused over the role of State and local governments on the Regional Response Teams. EPA has clarified § 300.32(b) to provide that States may be voting members on the RRT, while local representatives may participate in meetings in a non-voting capacity. The reason for allowing only one vote per State is to assure efficiency of RRT operations. Allowing an unlimited number of representatives from a single State to vote would distort the fairness of representation on the RRT. This would result in an unwieldy and unfair

voting system, which could be biased toward whoever had the most people in attendance. It should be noted that voting is rarely necessary within either the NRT or RRTs since members usually achieve consensus.

Another commenter suggested that the Plan specify those agencies that compose the Regional Response Team. Such specification is not appropriate to the national Plan, since participating agencies may vary from region to region. Therefore, specification is left to the regional plans.

Several commenters suggested that qualifications for various response personnel mentioned in Subpart C (OSC, SSC, etc.) be included in the Plan. EPA believes that the Plan is an inappropriate place to specify personnel qualifications. Depending on the area covered, qualifications may vary and they are more appropriately considered in the hiring process, not through regulation.

Section 300.33 of the Plan discusses the division of responsibilities, roles and coordinating activities that should be used in a response. Section 300.33(a) specifies the geographic division of response authority between EPA and the USCG. Because commenters noted that, within the USCG/EPA division, DOD has authority for response to releases from its own facilities, EPA has inserted this exception in § 300.33(a).

Many commenters urged that the Plan clearly state that the OSC is responsible for response operations, that others at the scene are under the direction of the OSC, and that the OSC must not be unduly hampered by officials not at the scene. Section 300.33(b) of the Plan clearly specifies that it is the OSC that directs on-scene operations. That is, the OSC is the official in charge of directing on-scene operations. The OSC's authority is subject only to other response authorities delegated under Executive Order 12316. Otherwise, the OSC directs all activities during a response action. The special assistance authorized by Subpart C (i.e., the SSC, ERT and strike forces) includes entities which may be called upon by the OSC to assist in response operations. EPA is sensitive to the fact that response should not be unduly delayed while awaiting approvals or concurrence by officials who are removed from the scene.

Section 300.33(b) (1) through (10) provides a checklist of OSC responsibilities during a response. This list is complementary to responsibilities in Subparts E and F and serves primarily to assure appropriate coordination by the OSC. One commenter suggested adding to § 300.33(b)(6) a requirement that the OSC notify FEMA of situations potentially requiring evacuation, temporary housing, or permanent relocation. EPA agrees and has added this requirement and consolidated § 300.33(b) (6) and (9) into a single paragraph. In addition, in order to assure that the notifications for which an OSC has responsibility are stated in one place, EPA has added a sentence to § 300.33(b)(7) noting that the OSC may call upon HHS for advice in the worker health and safety area and included a new paragraph (9) requiring notification of affected Federal land managing agencies. Several commenters stated that in § 300.33(b), the OSC also should be required to notify State and local agencies. EPA does not believe this notification is necessary since the Plan already provides for the National Response Center to notify the Governor of the affected State or his or her designee of discharges or releases. Other State and local agencies should arrange to be notified through their State's mechanisms.

A few commenters suggested that the Emergency Response Team (ERT) responsibilities cited in § 300.33(d) of the proposal be expanded and that only the OSC be allowed to request the support of the ERT. EPA does not believe expansion of ERT responsibilities is necessary, since those detailed in the Plan are broad examples of the types of services the ERT provides. Although the OSC is the primary requester of ERT services, the ERT also may be needed for response activities by others. EPA believes this flexbility should be preserved in the Plan. Another commenter stated that the Plan leaves to the ERT decisions which should be made in the Plan. EPA notes that nowhere in § 300.34(c) does the Plan require decision making by the ERT—it simply outlines ERT expertise which can be called upon.

Several commenters questioned how the RRT decides whether or not to activate. Some of these commenters were concerned that the RRT should not become involved in response operations without approval of the OSC. The Regional Response Team is activated when the criteria in § 300.34(f) are met. It is not necessary for the RRT to receive OSC concurrence to activate. Instead, the chairman of the RRT makes the decision as to whether the RRT should be activated (often on the basis of a request from a State representative). In the majority of cases, the chairman is from the same agency as the OSC, and, in fact, can be the OSC's supervisor. Therefore, there should be no disagreement as to the need to activate the RRT. Imposition of formal OSC concurrence requirements are unnecessary and inappropriate.

Section 300.34(f)(5)(iv) allows the RRT to suggest replacement of the OSC. A few commenters suggested that private parties also be allowed to do so. Certainly, the Plan does not preclude such a request; however, it is inappropriate to encourage such requests in the Plan, especially since the OSC will often be involved in situations where private parties have failed to clean up properly. Requests for replacement of OSCs should not occur every time a responsible party disagrees with the OSC action.

Several commenters noted that proposed § 300.36(c) did not clearly state the CERCLA and CWA requirements for reporting discharges and releases. Accordingly, EPA has clarified the Plan to note that reports of discharges or releases of oil and hazardous substances above reportable quantities should be made in accordance with 33 CFR Part 153, and section 103(a) of CERCLA. In addition, EPA has eliminated § 300.35(d) regarding pollution reports since the same requirement appears elsewhere in the Plan. A few commenters requested that § 300.36 of the proposal note that the Spill Clean-up Inventory System (SKIM) is also available to private parties. EPA agrees and has noted this availability in § 300.37.

D. Subpart D

Subpart D establishes requirements for Federal regional contingency plans and Federal local contingency plans. Several commenters requested that additional detail be added to the NCP regarding the required content of these plans. EPA does not believe additional material is necessary. First, in the case of regional plans, § 300.42 (a), (b) and (c) outlines the components that should be included in such plans, and explicitly states that regional plans will follow the format of the NCP to the extent possible. This provides guidance to the regions on the topics which should be covered in their plans. Further detail could result in an unduly rigid mechanistic formula for developing regional plans. EPA recognizes that each region will have distinct needs in developing such plans and has provided the flexibility to allow these plans to be tailored to regional needs. These plans are required to be developed by RRTs in consultation with States.

In the case of Federal local plans (§ 300.43), EPA has deleted the requirement that they follow the format of the national Plan. Several

commenters pointed out that this section gave inadequate attention to local needs and conditions. By deleting the requirement that Federal local plans should follow the NCP, EPA is providing greater flexibility for local plans to be developed in accordance with provisions in § 300.43(a) and to be adequately coordinated with existing local response structures.

Finally, several commenters questioned why the Plan did not require State and local contingency planning by State and local governments. EPA strongly encourages all levels of government to undertake such planning; however, EPA believes it is only appropriate for the NCP to specify mandatory planning by Federal entities.

Several commenters suggested that the Plan require adoption of State and local plans when they accomplish the same purposes as the Federal regional or Federal local plan. Such a requirement is unnecessary in this Plan. First, regional plans cover Federal regions which cross State boundaries, thus State plans would not be appropriate as regional plans. Second, both Federal regional and Federal local plans outline how Federal entities will coordinate with State and local governments. Local and State plans generally deal with coordination of State and local entities. Because of these differences, such a requirement would, in most cases, simply pose an additional burden of examining and determining that such Plans are not appropriate. It should be noted, however, that nothing in this Plan precludes drawing upon State and local plans where they are appropriate.

Conversely, other suggested that State plans be required to conform to the NCP. EPA does not believe that such a requirement is appropriate to the national Plan since States should be free to tailor State plans to particular State needs. This would not, however, preclude EPA from requiring State planning as a condition for receipt of Federal funds.

E. Subpart E

Subpart E establishes procedures for responding to discharges of oil pursuant to section 311 of the Clean Water Act. This section reflects the experience gained in oil removal under that program and remains largely unchanged from the existing Plan. Like Subpart F, this subpart includes phases of response, beginning with discovery of discharges under § 300.51, and continuing through documentation for cost recovery actions in § 300.54. In addition, § 300.55 contains a summary of actions the OSC should take upon being notified of a discharge of oil; § 300.56 details requirements for pollution reports, which are reports submitted on removal actions; § 300.57 details special considerations for safety of personnel and waterfowl conservation which must be considered during removal action; and § 300.58 details funding requriements for oil removal.

EPA received very few comments on this Subpart. Most comments generally favored EPA's decision not to make any significant changes to the procedures in the existing Plan for responding to oil discharges. The comments and modifications to Subpart E are discussed below.

Some commenters noted that Subpart E did not clearly differentiate between the requirements for persons "in charge" and "responsible parties" under section 311 of the CWA. EPA has clarified this distinction in two provisions. First, § 300.51(a)(1) has been modified to clarify that notification requirements in case of oil spills under section 311(b)(5) apply to all persons "in charge," not "responsible parties." Second, similar clarification has been made to § 300.55(a)(4) where "responsible party" has been changed to a "discharger or other person."

One commenter noted that § 300.58 did not adequately discuss all sources of funding available for oil response actions. EPA agrees and has modified § 300.58(c) to more clearly differentiate between oil related funds, including the oil pollution fund authorized by section 311(k) of the CWA; the fund authorized by the Deepwater Port Act; the fund authorized by the Outer Continental Shelf Lands Act; and the fund authorized by the Trans-Alaska Pipeline Authorization Act.

F. Subpart F

Subpart F is the major new section of the NCP. It establishes the management system under which response to hazardous substances will be undertaken. Although most of Subpart F applies to Fund-financed response, it should be noted that § 300.66 (e) through (j) also applies to clean-up by responsible parties. Subpart F establishes seven phases of response, from discovery through various levels of response to documentation of response for cost recovery purposes. The phases are designed to give response personnel a decisionmaking framework for undertaking response action. All of the phases need not be undertaken. For example, Phase III—Immediate Removal, will not be necessary at all releases, nor will all releases be eligible for such funding.

Several commenters stated that the process established in Subpart F appears to contemplate a lengthy planning process. One commenter suggested that the Plan include deadlines for particular actions. Another suggested that planning be minimized.

EPA believes that the response steps established in Subpart F assure that Fund money is spent in the most judicious manner on the most severe problems by providing several check points for taking further action. Such checks are necessary, since at each step in the planning process new information may become available showing that the problem is not as severe as anticipated or that it is, in fact, more severe than anticipated. The inclusion of such check points does not cause delay or lengthy planning. Subpart F allows the planning to be tailored to the complexity of the problem presented.

Many commenters suggested that, throughout Subpart F, the term "release" should explicitly include "substantial threat of release" under section 104(a) of CERCLA. EPA notes that the Plan's definition of "release" (see § 300.6) incorporates this term in order to avoid repeating the phrase. Where the Plan refers to section 106 of CERCLA in which enforcement authority does not include "substantial threat" but merely a threat posing imminent and substantial endangerment, the Plan notes this through reference to section 106 of CERCLA. The same scheme has been used with regard to discharges of oil.

Section 300.61 sets forth basic hazardous substance response authorities and policies. Several commenters questioned the adequacy of § 300.61(c)(3) and pointed out that it is important to keep the public informed and to include them in the decision-making process. Specific comments included: (1) Strong advocacy of greater emphasis on public participation; (2) that the Plan places unlimited and unquestioned authority in the hands of the lead agency and NRT; (3) that there should be some procedure to enable the public to understand the protection they are being provided; and (4) that the Plan should include specific procedural requirements for public information and consultation.

EPA agrees that it is important to be sensitive to the needs of communities affected by hazardous substance releases and has incorporated this in § 300.61(c)(3). EPA has devoted substantial effort toward developing an effective community relations program which has been implemented through guidance documents. In order to indicate

that the Agency has issued guidance in this area, EPA has added in § 300.61(c)(3) that it is necessary to be sensitive to local concerns "in accordance with applicable guidance." The guidance provides for development of community relations programs on a site-by-site basis.

EPA has added a new § 300.62 on the State role under CERCLA. EPA decided to add this new section to emphasize the ability of States to undertake responsibility for much of the response detailed in Subpart F. This new section is discussed at length in Section IV of this Preamble.

Section 300.63 of Subpart F is the first step in any response. It details the methods by which releases are discovered, and therefore, the methods by which response personnel became aware of potential problems. This section is required by section 105(1) of CERCLA. The provisions of this section are discussed at length in Section II of this preamble. A few specific comments on this section are noted here. Several commenters noted that § 300.62(b) of the proposal was unclear as to the notification requirements for reporting releases to the NRC. EPA has clarified this provision in a new § 300.63(b) by detailing the requirements for notification and noting that reporting requirements under section 103(a) of CERCLA arise when a reportable quantity is released. Another commenter pointed out that States may not want to be notified in the case of minor releases pursuant to proposed § 300.62. EPA notes that this is a statutory requirement of section 103 of CERCLA.

Section 300.64 of the Plan establishes the procedures for performing a preliminary assessment of releases. This assessment is generally based on readily available information and is tailored to the particular type of release (i.e., emergency or long-term). In situations requiring emergency action pursuant to § 300.65, this initial investigation and evaluation will be short. In the case of slower, long-term releases, this step will be more extensive and is the first step for investigating and evaluating the problems posed by the release. The content of this section is discussed generally in Section II above. Additional comments are noted below.

Several commenters said that the Plan was not specific enough regarding the appropriate extent of a preliminary assessment and that the assessment procedures were not adequate for evaluating a release. Others requested that such assessments be eliminated since assesaments can be very time consuming and costly.

EPA believes that § 300.64 is sufficiently detailed. The preliminary assessment is for screening purposes only—it is not the final evaluation for determining whether remedial action is needed. Requirements for a more detailed preliminary assessment would interfere with and delay the decision making process at this stage of the response. For example, a less severe release where information is readily available would allow an expedited assessment. More serious releases with little information available would require an extended assessment. For this reason, EPA has included the methods which may be employed to undertake an assessment, while the lead agency reserves the discretion to tailor the assessment to the factors pertaining to the individual release. EPA further notes that the assessment is just the first step in evaluating a release. It is used to screen out those releases which may not merit a Federal response. For example, EPA's experience indicates that the vast majority of classic spills are responded to by private parties or State or local governments, making further Federal involvement unnecessary or very limited. The assessment also allows the lead agency to quickly move into Phase III and take emergency action, if necessary; to determine that the release requires further evaluation under Phase IV, through a site inspection, and perhaps investigation; or to determine that it does not require Fund-financed response. This preliminary assessment assures that limited Fund money is available to respond to the most significant releases.

Other commenters questioned the need for a site visit during Phase II. A site visit will be made only in those situations in which additional information is needed (§ 300.64(b)) to allow the lead agency to make an informed decision on the appropriate response to the release.

One commenter pointed out that § 300.63(b) would have prohibited a site visit if sophisticated safety equipment was needed, thus prohibiting a visit even if such equipment was available. EPA agrees that this provision could be better worded and has replaced this requirement with: "* * * if conditions are such that it may be performed safely." This modification allows such visits to be taken when safety equipment is readily available, while still assuring the safety of response personnel going on or near the release.

A few commenters questioned how EPA will determine whether further response is required, i.e., whether certain levels of contamination will be responded to while others will not. During the preliminary assessment, one cannot determine with certainty the degree of contamination. For this reason, EPA has included the factors of § 300.64(c) for the lead agency to use in determining when no further action is necessary. Amount of contaimination alone is not the sole determining factor. The other factors of § 300.64(c) must be considered as well.

Section 300.65 establishes criteria for undertaking immediate removals (i.e., emergency response). Several commenters contended that the criteria for taking immediate removal needed to be more detailed. The Plan gives several examples of the types of situations requiring emergency action as well as a threshold for taking such action (see § 300.65(a)). EPA does not believe that further detail is appropriate. The Agency has listed as examples those situations that will clearly require emergency response. For those situations that are not specifically listed, application of the criteria contained in § 300.65(a) will determine whether emergency removal is necessary. EPA believes that this format provides the flexibility required for effective response to a wide range of emergencies.

Several commenters pointed out that the statutory requirement of § 104(c)(3) of CERCLA for limiting response to six months or $1 million was omitted from the section on Immediate Removal. EPA agrees that the statutory requirement should be reiterated in the Plan and has accordingly added a new paragraph (d).

Several commenters suggested that a substantial amount of decisionmaking authority should be delegated to OSCs in order that response not be delayed pending consultation with officials not at the site. Another commenter suggested requiring OSC consultation with EPA Headquarters to assure consistency of Fund expenditures. Moreover, one commenter suggested that the Plan allow OSCs to spend up to $500,000 on removal actions. EPA agrees that response personnel must be able to address classic emergency situations in a timely manner, and believes that § 300.65 facilitates timely response. EPA does not believe, however, that delegations of spending authority should be included in the Plan, since such delegations are often subject to modifications. Internal agency approval processes for EPA personnel to expend funds are neither appropriate to the Plan nor required by section 105 of CERCLA. Instead, § 300.65 contains the methods and criteria for determining whether the problem should be addressed as an emergency, leaving administrative

funding procedures to Agency guidance and directives.

Section 300.66—Phase IV provides for continuing evaluation of releases through investigation and inspection of the release, and details the procedure for using the Hazard Ranking System and compiling the National Priorities List. Section II of this preamble discusses investigation and inspection activities and Section V discusses the establishment of the National Priorities List.

Section 300.67—Phase V sets forth the criteria for undertaking planned removal actions. A discussion of comments related to planned removal provisions in the Plan is included in Section VI above.

Section 300.68—Phase VI provides methods and criteria for undertaking remedial action and for determining the appropriate extent of remedy. A full discussion of the criteria and methods for determining the appropriate extent of remedy and the comments on these criteria and methods is set forth in Sections II and III of this preamble.

Section 300.69—Phase VII requires response personnel to maintain and collect information during all response actions for potential use in cost recovery. This section of proposed revisions is unchanged except for the addition to paragraph (b) of the provision that information and reports on response actions must be forwarded by response personnel only when taking Fund-financed action. This modification clarifies that Federal agencies, such as DOD, that take remedial action using their own funds need not forward such reports to the RRC or NRT.

Section 300.70 sets forth methods for remedying releases in accordance with section 105 of CERCLA. A discussion of this provision is included in Section II of this preamble. Several comments were received suggesting minor modifications and additions to this section. The Agency has incorporated those modifications and additions that included appropriate methods for remedying releases and covered by a category already listed that were not already included in the methods listed in § 300.70

Section 300.71 establishes requirements for worker health and safety. This section was proposed as § 300.70 and detailed worker health and safety considerations, eligible and noneligible costs, and methods for obtaining funding under the Disaster Relief Act. EPA has deleted the eligible and noneligible costs section of the proposal. Several commenters found the section vague and confusing. Since it is difficult to discern cost components that are eligible or noneligible from broad categories which are outlined in the proposal, EPA is deleting this section. EPA notes that delineation of eligible and noneligible costs in the Plan is not a requirement of section 105 of CERCLA. Eligible costs are specifically defined in State contracts or cooperative agreements and other guidance (such as OMB circulars and EPA grant regulations).

Proposed § 300.70(a) (now section 300.71) has been modified to clarify that response personnel must comply with applicable OSHA regulations. EPA has deleted the requirement that OSCs submit safety reports to the work group established pursuant to section 301(f) of CERCLA. The work group has nearly completed its study and recommendations; thus, it is unnecessary for OSCs to submit safety reports for the group's consideration.

G. Subpart G

Section 111(b)(1) of CERCLA provides that damages for injury to, destruction of, or loss of natural resources resulting from a release of hazardous substance, for purposes of CERCLA and section 311(f) (4) and (5) of the CWA, will be assessed by Federal officials designated by the President under the National Contingency Plan. If further provides that designated officials will act as trustees for purposes of section 111 of CERCLA and section 311(f)(5) of the CWA.

Section 111(b) of CERCLA allows claims to be asserted against the Superfund for (1) claims asserted and compensable but unsatisfied under section 311 of the CWA which are modified by section 304 of CERCLA; and (2) other claims resulting from a release or threat of release of a hazardous substance from a vessel or facility for injury to, destruction of, or loss of natural resources, including cost for damage assessment. Such claims may be asserted only by the President, acting as trustee, for natural resources over which the United States has sovereign rights, or natural resources within the territory or the fishery conservation zone to the extent they are managed or protected by the United States, or by any State for natural resources within the boundary of that State belonging to, managed by, controlled by, or appertaining to the State.

Section 107(f) of CERCLA provides that the President or authorized representative of a State will act on behalf of the public as trustee to recover for damages to natural resources pursuant to section 107 of CERCLA.

Subpart G implements these provisions, pursuant to Executive Order 12316, by designating those Federal trustees who will act on behalf of the President in assessing damages, bringing claims, and recovering damages for natural resources under these provisions of CERCLA. A few commenters were concerned that Subpart G did not adequately note the purposes for which trustees are appointed. EPA has clarified this by noting in section 300.72 that Subpart G is limited to the purposes of CERCLA. To clarify that States are also given authority to undertake such actions, EPA has added a new § 300.73 that provides that States are trustees for resources within the States' boundaries, belonging to, managed by, controlled by, or appertaining to the State. In addition, EPA has added a new subsection in § 300.72. Section 300.72(a) designates trustees for land subject to the management or protection of a Federal land managing agency and § 300.72(b) designates trustees for fixed or non-fixed resources subject to the management or protection of a Federal agency. These subsections are intended to clarify trusteeship responsibility for these individual resources. Subsequent sections have been renumbered accordingly.

In addition, EPA has also modified § 300.72(c) to clarify that in subsection (c), where affected resources are subject to the respective statutory authorities and jurisdictions of both DOI and DOC in the geographical areas identified in this subsection, they will act as co-trustees. In order to facilitate more efficient and effective exercise of Federal trusteeship responsibilities, the DOC and DOI, as part of the co-trusteeship responsibility for waters subject to tidal influence and for contiguous upland areas where a pollution incident may affect resources under the authorities of both agencies, are encouraged to enter, as soon as practicable, into a Memorandum of Understanding which will delineate the respective trusteeship responsibilities of each agency in these areas. Co-trusteeship will not apply to a resource(s) for which either agency has sole management or protective responsibility. In these cases, the agency having that responsibility will act as sole Federal trustee. EPA has also added a provision to § 300.74 which encourages that, in cases where trustees have concurrent jurisdiction, the trustees coordinate their activities. The term "natural resources," as defined by CERCLA, is extremely broad. The term includes both fixed and non-fixed resources. It is, therefore, possible that trusteeship responsibilities will overlap. Since natural resource assessment, damage assessment, and restoration

planning generally will need to be performed and restoration plans developed on a geographic basis, it is important that trustees coordinate efforts.

H. Subpart H

The proposed Subpart H replaced Annex X of the previous Plan and provided for a case-by-case authorization by the Administrator or her designee of the use of dispersants or other chemicals in treating oil discharges or hazardous substance releases. The Agency explained in the preamble to the proposed revisions (47 FR 10978) that it was eliminating the detailed testing procedures of Annex X in order to simplify the process for authorizing the use of dispersants and other chemicals. Testing procedures and a process for authorizing use of dispersants and other chemicals would be developed as the Agency gained greater knowledge on this subject.

Many commenters objected to the proposed Subpart H. Most commenters urged that the decision making authority should not be with the Administrator or a designee in Headquarters but rather should be with the OSC in order to enable rapid decision making. Several other commenters suggested that the Plan should include testing procedures to enable the Agency to develop a list of acceptable dispersants and other chemicals that could be used as a guide in decision making. Finally, some commenters stated that Subpart H should provide for involvement of the affected State in the decision making process.

In response to these comments, EPA has made the following changes to Subpart H. First, the proposed text of § 300.81(b) has been deleted as being unnecessary and, in its place, provision has been made for OSCs to authorize the use of dispersants or other chemicals. The OSC may authorize the use of dispersants or other chemicals to treat discharges of oil, if such dispersants or other chemicals are on EPA's Acceptance List developed pursuant to the testing and acceptance procedures of the previous Plan. There are three important limitations in this authorization. First, it applies only to discharges of oil and not to releases of hazardous substances. OSCs have much greater experience in responding to discharges of oil than releases of hazardous substances into water. Additionally, most of the dispersants or other chemicals on EPA's Acceptance List are for use primarily in treating discharges of oil. The second limitation is that OSCs may only authorize use of dispersants or other chemicals on EPA's Acceptance List. That list includes twenty-eight products tested and found acceptable for their intended purposes pursuant to Annex X of the previous Plan. While EPA believes that the procedures in former Annex X need modification to simplify the testing requirements, EPA also believes that the decisions to include those twenty-eight products on the list were sound and that they can be used in an environmentally safe manner under the proper conditions and directions. Finally, the Agency, in § 300.81(b), has specifically provided that the affected State will be consulted regarding the use of any dispersant or other chemicals in the waters of such State. The OSC must also obtain the concurrence of the EPA representative to the Regional Response Team.

For those dispersants and other chemicals not on EPA's Acceptance List, § 300.81(c) continues to provide that the Administrator or her designee may authorize use of such products for discharges of oil or releases of hazardous substances. This provision ensures that any product may be authorized for use if it is determined that such product can be used safely in the waters into which the oil has been discharged or the hazardous substances released.

Subpart H, at this time, does not include testing procedures and a process for designation dispersants or other chemicals as acceptable for use. However, the Agency is developing new testing procedures and will propose those procedures and an approval process for public comment in the near future. The time constraints for promulgating the final revisions precluded completion of development of new testing procedures in time for including them in this publication.

VIII. Other Comments

This section discusses additional issues raised by comments which were generally applicable to the Plan or a particular subpart, or which were outside the scope of the NCP.

Several commenters objected to language in the Plan that used the term "should" in lieu of "shall." In some instances, EPA agreed with the comments and has modified the language. Each of these modifications is noted in the discussion above of the individual subparts. However, EPA believes that, in the remaining cases, use of the term "should" is preferable for several reasons. First, EPA sought, in revising the Plan, to provide a document that would allow the Federal government, or States acting under contracts or cooperative agreements, the flexibility to design response actions to the particular needs of individual releases. Use of the term "shall" would impose upon response personnel the duty to routinely perform certain actions regardless of site-specific exigencies, thus inhibiting timely and effective response. Second, response personnel have many mandatory statutory requirements that they must meet prior to or during a response. Where there is a mandatory statutory requirement, the Plan specifies those requirements as mandatory. However, if the Plan were to make all other requirements mandatory (such as notification of all other Federal agencies, all individual State agencies, and all involved parties) response personnel would be faced with an enormous administrative burden that would severely hamper their ability to perform their primary objective of timely and effective response. Finally, in the new CERCLA response program, there is, to date, little experience in responding to releases from hazardous waste sites. EPA has made mandatory these provisions relating to activities that experience has shown to be necessary at all hazardous waste sites, or which are required by statutes. EPA has provided discretion for other activities that may be appropriate. This allows the OSC or responsible official to make the decision, based on the particular site conditions, that an action is or is not appropriate.

Other commenters questioned whether permits would be required for CERCLA sites. EPA also believes this is an issue beyond the scope of the NCP. This issue will be resolved in conjunction with those EPA programs that affect CERCLA actions.

Several commenters asked what criteria EPA would use in determining whether a release poses an "imminent and substantial endangerment." This term has limited usage in CERCLA, and it pertains exclusively to response authority thresholds for Fund-financed response to pollutants and contaminants under section 104(a) of CERCLA and to the threshold for enforcement actions under section 106 of CERCLA. Section 106 is not implemented through the Plan. The term is a legal term of art which the courts have interpreted through a series of cases, and thus, is beyond the scope of the NCP.

Many commenters questioned how clean-up of Federal facilities would be addressed. EPA is currently developing guidance on this issue. Since the issue requires agreement among Federal agencies as to their respective clean-up obligations, EPA believes that the issue should be resolved in guidance, or

through Memoranda of Understanding, rather than through the Plan.

Several commenters objected to the deletion of Annex VI of the previous Plan which contained sampling procedures. Suggestions included: (1) That, if deleted, a manual should thoroughly cover sampling; and (2) that a separate section should specify basic elements of a site assessment, including reference to sampling and test protocols. The Plan does specify the basic elements for site assessments in sections 300.64 and 300.66. However, EPA does not believe it is necessary to include technical sampling guidance in the Plan and notes that sampling procedures are not required by section 105 of CERCLA. However, EPA agrees that sampling procedures are important in assessing sites and, accordingly, has begun preparation of a sampling manual.

One commenter suggested that Subpart F should provide for restoration of natural resources. The statute does not require that the Plan address resource restoration, other than that which is incidental to the actual response operation. The appropriate place for addressing the restoration phase is through the damage assessment regulations and claims procedures required by sections 301 and 112 of CERCLA.

A few commenters noted that treatment of oil and hazardous substances as separate entities in the Plan makes it difficult to report and fund incidents involving both oil and hazardous substances. EPA will coordinate such incidents on a case-by-case basis. The statutory authorities (and, therefore, funding and response requirements) for the two types of materials are distinct. Reporting of discharges or releases should not pose a problem since both are reported to one central telephone number.

Several commenters raised issues regarding CERCLA enforcement efforts. Enforcement efforts are not addressed by the NCP. Guidelines for use of enforcement authorities have been published in a separate document at 47 FR 20664 (May 13, 1982).

IX. Regulatory Impact Analysis; Regulatory Flexibility Act

An analysis of the economic impacts of the revisions to the NCP was conducted to determine whether the revised NCP is a major rule under Executive Order 12291 and, therefore, required the preparation of a Regulatory Impact Analysis. EPA concluded that the revised Plan is a major rule because it is likely to result in an annual effect on the economy of $100 million or more. The Regulatory Impact Analysis is available for inspection at Room S-398, Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460. This regulation was reviewed by the Office of Management and Budget.

As required by the Regulatory Flexibility Act of 1980, the Agency has reviewed the impact of the revised NCP on small entities. EPA certifies that the NCP will not have a significant impact on a substantial number of small entities. Aside from the level of clean-up required by responsible parties, the NCP does not address enforcement actions. However, the Regulatory Impact Analysis recognizes that some enforcement actions (including cost recovery actions) taken against parties responsible for hazardous substance releases at sites that are identified on the National Priorities List after it is published. Therefore, some of these costs have been included in assessing the total impact of the NCP. Moreover, it is a matter of Agency discretion whether or not to proceed with enforcement actions against small entities which may be significantly affected by such actions. Therefore, there are no *necessary* adverse impacts on small entities directly associated with the NCP.

As part of the Regulatory Impact Analysis of the revised NCP, EPA estimated that some 60 small firms might be adversely affected by enforcement actions associated with the NCP. This estimate is based on the relative proportions of small firms to other size firms within affected industries, and is not reflective of actual responsibilities of small firms for particular hazardous substance releases. The Agency is consequently not committed to taking this number of enforcement actions against small firms, nor limited to this figure. Nevertheless, EPA estimates that this would result in far less than 20 percent of the total number of small firms experiencing adverse effects. In general, parties responsible for hazardous substance releases may be found across a full range of industries and SIC codes. No small organizations will be adversely affected by the revised NCP, nor is there any likelihood of significant impacts on a substantial number of small municipalities as a result of enforcement actions associated with the NCP. Interested parties are referred to the details of the analysis, which is available for inspection at Room S-398, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460.

List of Subjects in 40 CFR Part 300

Air pollution control, Chemicals, Hazardous materials Intergovernmental relations, National resources, Occupational safety and health, Oil pollution, Reporting and record keeping requirements, Superfund, Waste treatment and disposal, Water pollution control, Water supply.

Dated: July 8, 1982.

Anne M. Gorsuch,

Administrator.

Part 1510, Title 40 of the Code of Federal Regulations is redesignated as Part 300 in a new Subchapter J of chapter I and revised to read as follows:

PART 300—NATIONAL OIL AND HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN

Subchapter J—Superfund Programs

Subpart A—Introduction

Sec.

Subpart B—Responsibility

Subpart C—Organization

Subpart D—Plans

Subpart E—Operational Response Phases for Oil Removal

Subpart F—Hazardous Substance Response

Sec.

Authority: Sec. 105, Pub. L. 96-510, 94 Stat. 2764, 42 U.S.C. 9605 and sec. 311(c)(2), Pub. L. 92-500, as amended; 86 Stat. 885, 33 U.S.C. 1321(c)(2); Executive Order 12316, 47 FR 42237 (August 20, 1981); Executive Order 11735, 38 FR 21243 (August 1973).

Subpart A—Introduction

§ 300.1 Purpose and objectives.

The purpose of the National Oil and Hazardous Substances Pollution Contingency Plan (Plan) is to effectuate the response powers and responsibilities created by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERLA) and the authorities established by section 311 of the Clean Water Act (CWA), as amended.

§ 300.2 Authority.

The Plan is required by section 105 of CERCLA, 42 U.S.C. 9605, and by section 311(c)(2) of the CWA, as amended, 33 U.S.C. 1321(c)(2). In Executive Order 12316 (46 FR 42237) the President delegated to the Environmental Protection Agency the responsibility for the amendment of the NCP and all of the other functions vested in the President by section 105 of CERCLA. Amendments to the NCP shall be coordinated with members of the National Response Team prior to publication for notice and comment. Amendments shall also be coordinated with the Federal Emergency Management Agency and the Nuclear Regulatory Commission in order to avoid inconsistent or duplicative requirements in the emergency planning responsibilities of those agencies.

§ 300.3 Scope.

(a) The Plan applies to all Federal agencies and is in effect for:

(1) The navigable waters of the United States and adjoining shorelines, for the contiguous zone, and the high seas beyond the contiguous zone in connection with activities under the Outer Continental Shelf Lands Act or the Deep Water Port Act of 1974, or which may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Fishery Conservation and Management Act of 1976). (See sections 311(b)(1) and 502(7) of the Clean Water Act.)

(2) Releases or substantial threats of releases of hazardous substances into the environment, and releases or substantial threats of releases of pollutants or contaminants which may present an imminent and substantial danger to public health or welfare.

(b) The Plan provides for efficient, coordinated and effective response to discharges of oil and releases of hazardous substances, pollutants and contaminants in accordance with the authorities of CERCLA and the CWA. It provides for:

(1) Division and specification of responsibilities among the Federal, State and local governments in response actions, and appropriate roles for private entities.

(2) The national response organization that may be brought to bear in response actions, including description of the organization, response personnel and resources that are available to respond.

(3) The establishment of requirements for Federal regional and Federal local contingency plans, and encouragement of pre-planning for response by other levels of government.

(4) Procedures for undertaking removal operations pursuant to section 311 of the Clean Water Act,

(5) Procedures for undertaking response operations pursuant to CERCLA.

(6) Designation of trustees for natural resources for purposes of CERCLA.

(7) National policies and procedures for the use of dispersants and other chemcials in removal and response actions.

(c) In implementing this Plan, consideration shall be given to the Joint Canada/U.S. Contingency Plan; the U.S./Mexico Joint Contingency Plan and international assistance plans and agreements, security regulations and responsibilities based on international agreements, Federal statutes and executive orders. Actions taken pursuant to this Plan shall conform to the provisions of international joint contingency Plans, where they are applicable. The Department of State should be consulted prior to taking any action which may affect its activities.

§ 300.4 Application.

The Plan is applicable to response taken pursuant to the authorities under CERCLA and section 311 of the CWA.

§ 300.5 Abbreviations.

(a) Department and Agency Title Abbreviations.

DOC—Department of Commerce
DOD—Department of Defense
DOE—Department of Energy
DOI—Department of the Interior
DOJ—Department of Justice
DOL—Department of Labor
DOS—Department of State
DOT—Department of Transportation
EPA—Environmental Protection Agency
FEMA—Federal Emergency Management Agency
HHS—Department of Health and Human Services
NIOSH—National Institute for Occupational Safety and Health
NOAA—National Oceanic and Atmospheric Administration
OSHA—Occupational Safety and Health Administration
USCG—U.S. Coast Guard
USDA—U.S. Department of Agriculture

(b) Operational Title Abbreviations.

ERT—Environmental Response Team
FCO—Federal Coordinating Officer
NRC—National Response Center
NRT—National Response Team
NSF—National Strike Force
OSC—On-Scene Coordinator
PAAT—Public Affairs Assist Team
PIAT—Public Information Assist Team
RRC—Regional Response Center
RRT—Regional Response Team
SSC—Scientific Support Coordinator

§ 300.6 Definitions.

Terms not defined in this section have the meaning given by CERCLA or the CWA.

Claim, as defined by section 101(4) of CERCLA, means a demand in writing for a sum certain.

Claimant, as defined by section 101(5) of CERCLA, means any person who presents a claim for compensation under CERCLA.

Coastal zone, as defined for the purpose of this Plan, means all U.S. waters subject to the tide, U.S. waters of the Great Lakes, specified ports and harbors on the inland rivers, waters of the contiguous zone, other waters of the high seas subject to this Plan, and the land surface or land substrata, ground waters, and ambient air proximal to those waters. The term coastal zone delineates an area of Federal responsibility for response action. Precise boundaries are determined by EPA/USCG agreements and identified in Federal regional contingency plans.

Contiguous zone means the zone of the high seas, established by the United

States under Article 24 of the Convention on the Territorial Sea and Contiguous Zone, which is contiguous to the territorial sea and which extends nine miles seaward from the outer limit of the territorial sea.

Discharge, as defined by section 311(a)(2) of CWA, includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying or dumping of oil. For purposes of this Plan, discharge shall also mean substantial threat of discharge.

Drinking water supply, as defined by section 101(7) of CERCLA, means any raw or finished water source that is or may be used by a public water system (as defined in the Safe Drinking Water Act) or as drinking water by one or more individuals.

Environment, as defined by section 101(8) of CERCLA, means (a) the navigable waters of the United States, the waters of the contiguous zone, and the ocean waters of which the natural resources are under the exclusive management authority of the U.S. under the Fishery Conservation and Management Act of 1976, and (b) any other surface water, ground water, drinking water supply, land surface and subsurface strata, or ambient air within the United States or under the jurisdiction of the United States.

Facility, as defined by section 101(9) of CERCLA, means (a) any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, or aircraft, or (b) any site or area where a hazardous substance has been deposited, stored, disposed of or placed, or otherwise come to be located; but does not include any consumer product in consumer use or any vessel.

Federally permitted release, as defined by section 101(10) of CERCLA, means (a) discharges in compliance with a permit under section 402 of the Federal Water Pollution Control Act; (b) discharges resulting from circumstances identified and reviewed and made part of the public record with respect to a permit issued or modified under section 402 of the Federal Water Pollution Control Act and subject to a condition of such permit; (c) continuous or anticipated intermittent discharges from a point source, identified in a permit or permit application under section 402 of the Federal Water Pollution Control Act, which are caused by events occurring within the scope of relevant operating or treatment systems; (d) discharges in compliance with a legally enforceable permit under section 404 of the Federal Water Pollution Control Act; (e) releases in compliance with a legally enforceable final permit issued pursuant to section 3005 (a) through (d) of the Solid Waste Disposal Act from a hazardous waste treatment, storage, or disposal facility when such permit specifically identifies the hazardous substances and makes such substances subject to a standard of practice, control procedure or bioassay limitation or condition, or other control on the hazardous substances in such releases; (f) any release in compliance with a legally enforceable permit issued under section 102 or section 103 of the Marine Protection, Research and Sanctuaries Act of 1972; (g) any injection of fluids authorized under Federal underground injection control programs or State programs submitted for Federal approval (and not disapproved by the Administrator of EPA) pursuant to part C of the Safe Drinking Water Act; (h) any emission into the air subject to a permit or control regulation under section 111, section 112, title 1 part C, title 1 part D, or State implementation plans submitted in accordance with Section 110 of the Clean Air Act (and not disapproved by the Administrator of EPA), including any schedule or waiver granted, promulgated, or approved under these sections; (i) any injection of fluids or other materials authorized under applicable State law (1) for the purpose of stimulating or treating wells for the production of crude oil, natural gas, or water, (2) for the purpose of secondary, tertiary, or other enhanced recovery of crude oil or natural gas, or (3) which are brought to the surface in conjunction with the production of crude oil or natural gas and which are reinjected; (j) the introduction of any pollutant into a publicly-owned treatment works when such pollutant is specified in and in compliance with applicable pretreatment standards of section 307 (b) or (c) of the CWA and enforceable requirements in a pretreatment program submitted by a State or municipality for Federal approval under section 402 of such Act, and (k) any release of source, special nuclear, or by-product material, as those terms are defined in the Atomic Energy Act of 1954, in compliance with a legally enforceable license, permit, regulation, or order issue pursuant to the Atomic Energy Act of 1954.

Fund or Trust Fund means the Hazardous Substance Response Trust Fund established by section 221 of CERCLA.

Ground water, as defined by section 101(12) of CERCLA, means water in a saturated zone or stratum beneath the surface of land or water.

Hazardous substance, as defined by section 101(14) of CERCLA, means (a) any substance designated pursuant to section 311(b)(2)(A) of the CWA; (b) any element, compound, mixture, solution, or substance designated pursuant to section 102 of CERCLA; (c) any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act (but not including any waste the regulation of which under the Solid Waste Disposal Act has been suspended by Act of Congress); (d) any toxic pollutant listed under section 307(a) of the CWA; (e) any hazardous air pollutant listed under section 112 of the Clean Air Act; and (f) any imminently hazardous chemical substance or mixture with respect to which the Administrator has taken action pursuant to section 7 of the Toxic Substances Control Act. The terms do not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (a) through (f) of this paragraph, and the term does not include natural gas, natural gas liquids, liquified natural gas or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).

Inland zone means the environment inland of the coastal zone excluding the Great Lakes and specified ports and harbors of inland rivers. The term inland zone delineates the area of Federal responsibility for response action. Precise boundaries are determined by EPA/USCG agreement and identified in Federal regional contingency plans.

Lead agency means the Federal agency (or State agency operating pursuant to a contract or cooperative agreement executed pursuant to section 104(d)(1) of CERCLA) that provides the on-scene coordinator or the responsible official.

Natural Resources, as defined by section 101(16) of CERCLA, means land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States (including the resources of fishery conservation zones established by the Fishery Conservation and Management Act of 1976), any State or local government or any foreign government.

Offshore facility, as defined by section 101(17) of CERCLA and section 311(a)(11) of the CWA, means any facility of any kind located in, on, or under any of the navigable waters of the U.S. and any facility of any kind which

is subject to the jurisdiction of the U.S. and is located in, on, or under any other waters, other than a vessel or a public vessel.

Oil, as defined by section 311(a)(1) of CWA, means oil of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil.

Oil pollution fund means the fund established by section 311(k) of the CWA.

Onshore facility, (a) as defined by section 101(18) of CERCLA means any facility (including, but not limited to, motor vehicles and rolling stock) of any kind located in, on, or under any land or non-navigable waters within the United States; and (b) as defined by section 311(a)(10) of CWA means any facility (including, but not limited to, motor vehicles and rolling stock) of any kind located in, on, or under any land within the United States other than submerged land.

On-Scene Coordinator means the Federal official predesignated by the EPA or the USCG (or a State official acting pursuant to a contract or cooperative agreement executed pursuant to section 104(d)(1) of CERCLA) to coordinate and direct Federal responses under this Plan; provided, however, that with respect to releases from DOD facilities or vessels, the OSC shall be designated by DOD.

Person, as defined by section 101(21) of CERCLA, means an individual, firm, corporation, association, partnership, consortium, joint venture, commercial entity, U.S. Government, State, municipality, commission, political subdivision of a State, or any interstate body.

Plan means the National Oil and Hazardous Substances Pollution Contingency Plan published under section 311(c) of the CWA and revised pursuant to section 105 of CERCLA.

Pollutant or contaminant, as defined by section 104(a)(2) of CERCLA, shall include, but not be limited to, any element, substance, compound, or mixture, including disease causing agents, which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism, either directly from the environment or indirectly by ingesting through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformation, in such organisms or their offspring. The term does not include petroleum, including crude oil and any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under section 101(14)(A) through (F) of CERCLA, nor does it include natural gas, liquified natural gas, or synthetic gas of pipeline quality (or mixtures of natural gas and synthetic gas).

Release, as defined by section 101(22) of CERCLA, means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment, but excludes (a) any release which results in exposure to persons solely within a workplace, with respect to a claim which such persons may assert against the employer of such persons; (b) emissions from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel, or pipeline pumping station engine; (c) release of source, by-product or special nuclear material from a nuclear incident, as those terms are defined in the Atomic Energy Act of 1954, if such release is subject to requirements with respect to financial protection established by the Nuclear Regulatory Commission under section 170 of such act, or, for the purposes of section 104 of CERCLA or any other response action, any release of source, by-product, or special nuclear material from any processing site designated under section 102(a)(1) or 302(a) of the Uranium Mill Tailings Radiation Control Act of 1978; and (d) the normal application of fertilizer. For the purposes of this Plan, release also means substantial threat of release.

Remove or removal, as defined by section 311(a)(8) of CWA refers to removal of oil or hazardous substances from the water and shorelines or the taking of such other actions as may be necessary to minimize or mitigate damage to the public health or welfare. As defined by section 101(23) of CERCLA, remove or removal means the clean-up or removal of released hazardous substances from the environment; such actions as may be necessary taken in the event of the threat of release of hazardous substances into the environment; such actions as may be necessary to monitor, assess, and evaluate the release or threat of release of hazardous substances; the disposal of removed material; or the taking or such other actions as may be necessary to prevent, minimize, or mitigate damage to the public health or welfare or the environment, which may otherwise result from such release or threat of release. The term includes, in addition, without being limited to, security fencing or other measures to limit access, provision of alternative water supplies, temporary evacuation and housing of threatened individuals not otherwise provided for, action taken under section 104(b) of CERCLA, and any emergency assistance which may be provided under the Disaster Relief Act of 1974.

Remedy or remedial action, as defined by section 101(24) of CERCLA, means those actions consistent with permanent remedy taken instead of, or in addition to, removal action in the event of a release or threatened release of a hazardous substance into the environment, to prevent or minimize the release of hazardous substances so that they do not migrate to cause substantial danger to present or future public health or welfare or the environment. The term includes, but is not limited to, such actions at the location of the release as storage, confinement, perimeter protection using dikes, trenches, or ditches, clay cover, neutralization, clean-up of released hazardous substances or contaminated materials recycling or reuse, diversion, destruction, segregation or reactive wastes, dredging or excavations, repair or replacement of leaking containers, collection of leachate and runoff, onsite treatment or incineration, provision of alternative water supplies, and any monitoring reasonably required to assure that such actions protect the public health and welfare and the environment. The term includes the costs of permanent relocation of residents and businesses and community facilities where the President determines that, alone or in combination with other measures, such relocation is more cost-effective than and environmentally preferable to the transportation, storage, treatment, destruction, or secure disposition offsite of hazardous substances or may otherwise be necessary to protect the public health or welfare. The term does not include offsite transport of hazardous substances, or the storage, treatment, destruction, or secure disposition offsite of such hazardous substances or contaminated materials unless the President determines that such actions (a) are more cost-effective than other remedial actions; (b) will create new capacity to manage in compliance with subtitle C of the Solid Waste Disposal Act, hazardous substances in addition to those located at the affected facility; or (c) are necessary to protect public health or welfare or the environment from a present or potential risk which may be created by further exposure to the continued presence of such substances or materials.

Respond or response, as defined by section 101(25) of CERCLA, means remove, removal, remedy, or remedial action.

Responsible official refers to the Federal offical (or State official acting pursuant to a contract or cooperative agreement executed pursuant to section 104(d)(1) of CERCLA), assigned by the lead agency, responsible for coordinating planned removals, remedial actions and related activities under Subpart F of this plan. Where reference is made to the responsibilities and authorities of an OSC, those responsibilities and authorities also apply to a responsible official.

Size classes of discharges refers to the following size classes of oil discharges which are provided as guidance to the OSC and serve as the criteria for the actions delineated in Subpart E. They are not meant to imply associated degrees of hazard to public health or welfare, nor are they a measure of environmental damage. Any oil discharge that poses a substantial threat to the public health or welfare or results in critical public concern shall be classified as a major discharge regardless of the following quantitative measures:

(a) *Minor discharge* means a discharge to the inland waters of less than 1,000 gallons of oil or a discharge to the coastal waters of less than 10,000 gallons of oil.

(b) *Medium discharge* means a discharge of 1,000 to 10,000 gallons of oil to the inland waters or a discharge of 10,000 to 100,000 gallons of oil to the coastal waters.

(c) *Major discharge* means a discharge of more than 10,000 gallons of oil to the inland waters or more than 100,000 gallons of oil to the coastal waters.

Trustee means any Federal natural resources management agency designated in Subpart G of this plan, and any State agency which may prosecute claims for damages under section 107(f) of CERCLA.

United States, as defined by section 311(2)(5) of CWA, refers to the States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the Virgin Islands, and the Trust Territory of the Pacific Islands. As defined by section 101(27) of CERCLA, United States and State include the several States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, The Commonwealth of the Northern Marianas and any other territory or possession over which the U.S. has jurisdiction.

Volunteer means any individual accepted to perform services by a Federal agency which has authority to accept volunteer services (example: see 16 U.S.C. 742f(c)). A volunteer is subject to the provisions of the authorizing statute, and § 300.25 of this Plan.

Subpart B—Responsibility

§ 300.21 Duties of President delegated to Federal agencies.

(a) In Executive Order 11735 and Executive Order 12316 the President delegated certain functions and responsibilities vested in him by the CWA and CERCLA, respectively. Responsibilities so delegated shall be responsibilities of Federal agencies under this Plan unless:

(1) Responsibility is redelegated pursuant to section 8(f) of Executive Order 12316, or

(2) Executive Order 11735 or Executive Order 12316 is amended or revoked.

§ 300.22 Coordination among and by Federal agencies.

(a) Federal agencies should coordinate their planning and response activities through the mechanisms described in Subpart C of this Plan and other means as may be appropriate.

(b) Federal agencies should coordinate planning and response action with affected State and local government and private entities.

(c) Federal agencies with facilities or other resources which may be useful in a Federal response situation should make those facilities or resources available consistent with agency capabilities and authorities.

(d) When the Administrator of EPA or the Secretary of the Department in which the Coast Guard is operating determines:

(1) That there is an imminent and substantial threat to the public health or welfare because of a discharge of oil from any offshore of onshore facility; or

(2) That there may be an imminent and substantial endangerment to the public health or welfare of the environment because of a release or threatened release of a hazardous substance, from a facility; he/she may request the Attorney General to secure the relief necessary to abate the threat. The action described here is in addition to any actions taken by a State or local government for the same purpose.

(e) In accordance with section 311(d) of CWA, whenever a marine disaster in or upon the navigable waters of the United States has created a substantial threat of a pollution hazard to the public health or welfare, because of a discharge or an imminent discharge from a vessel of large quantities of oil or hazardous substances designated pursuant to section 311(b)(2)(A) of CWA, the United States may:

(1) Coordinate and direct all public and private efforts to abate the threat;

(2) Summarily remove and, if necessary, destroy the vessel by whatever means are available without regard to any provisions of law governing the employment of personnel or the expenditure of appropriated funds. The authority for these actions has been delegated under Executive Order 11735 to the Administrator of EPA and the Secretary of the Department in which the Coast Guard is operating, respectively, for the waters for which each designates the OSC under this Plan.

(f) Response actions to remove discharges originating from the Outer Continental Shelf Lands Act operations shall be in accordance with this Plan.

(g) Where appropriate, discharges of radioactive materials shall be handled pursuant to the appropriate federal radiological plans.

§ 300.23 Other assistance by Federal agencies.

(a) Each of the Federal agencies listed in paragraph (b) of this section has duties established by statute, executive order, or Presidential directive which may be relevant to Federal response action following or in prevention of a discharge of oil or a release of a hazardous substance, pollutant or contaminant. These duties may also be relevant to the rehabilitation, restoration, and replacement of damaged or lost natural resources. Federal regional contingency plans should call upon agencies to carry out these duties in a coordinated manner.

(b) The following Federal agencies may be called upon by an OSC during the planning or implementation of a response to provide assistance in their respective areas of expertise, consistent with their capabilities and legal authorities:

(1) Department of Agriculture.
(2) Department of Commerce.
(3) Department of Defense.
(4) Department of Energy.
(5) Federal Emergency Management Agency.
(6) Department of Health and Human Services.
(7) Department of the Interior.
(8) Department of Justice.
(9) Department of Labor.
(10) Department of State.
(11) Department of Transportation.
(12) Environmental Protection Agency.

(c) In addition to their general responsibilities under paragraph (a) of this section Federal agencies should:

(1) Make necessary information available to the NRT, RRTs, and OSCs.

(2) Inform the NRT and RRTs (consistent with national security considerations) of changes in the availability of resources that would affect the operations of the Plan.

(3) Provide representative as necessary to the NRT and RRTs and assist RRTs and OSCs in formulating Federal regional and Federal local contingency plans.

(d) All Federal agencies are responsible for reporting releases of hazardous substances and discharges of oil from facilities or vessels which are under their jurisdiction or control in accordance with section 103 of CERCLA, and Subparts E and F of this Plan.

(e) Executive Order 12316 delegates to the USCG and EPA all authorities under sections 104 (a) and (b) and 101(24) of CERCLA subject to the following:

(1) HHS is delegated all authorities under section 104(b) of CERCLA relating to a determination that illness, disease or complaints thereof may be attributable to exposure to a hazardous substance, pollutant or contaminant. (In addition, section 104(i) of CERCLA calls upon HHS to: establish appropriate disease/exposure registries; conduct appropriate health surveys and studies; develop and provide appropriate testing for exposed individuals; develop, maintain and provide information on health effects of toxic substances; and maintain a list of areas restricted or closed because of toxic substance contamination.)

(2) FEMA is delegated the authorities vested in the President by section 104(a) of CERCLA to the extent they require permanent relocation of residents, businesses, and community facilities or temporary evacuation and housing of threatened individuals not otherwise provided for. (FEMA is also delegated authority under section 101(24) of CERCLA to the extent they require a determination by the President that "permanent relocaton of residents and businesses and community facilities" is included within the terms "remedy" and "remedial action" as defined in section 101(24) of CERCLA.)

(3) DOD is delegated all authority of section 104 (a) and (b) of CERCLA with respect to releases from DOD facilities or vessels, including vessels owned or bareboat chartered and operated.

(f) If the situation is beyond the capability of State and local governments and the statutory authority of Federal agencies, the President, acting upon a request by the Governor, may declare a major disaster or emergency and appoint a Federal Coordinating Officer to assume responsibility for direction and control of the Federal response.

§ 300.24 State and local participation.

(a) Each State governor is requested to assign an office or agency to represent the State on the appropriate RRT. Local governments are invited to participate in activities on the appropriate RRT as may be provided by State law or arranged by the State's representative. The State's representative may participate fully in all facets of activities of the appropriate RRT and is encouraged to designate the element of the State government that will direct State supervised response operations.

(b) State and local government agencies are encouraged to include contingency planning for response, consistent with this Plan and Regional Contingency Plans, in all emergency and disaster planning.

(c) States are encouraged to use State authorities to compel potentially responsible parties to undertake response actions, or to themselves undertake response actions which are not eligible for Federal funding.

(d) States may enter into contracts or cooperative agreements pursuant to section 104(c)(3) and (d) of CERCLA or section 311(c)(2)(H) of the CWA, as appropriate, to undertake actions authorized under Subparts E and F of this Plan. Requirements for entering into these agreements are included in §§ 300.58 and 300.62 of this Plan.

§ 300.25 Non-Government participation.

(a) Industry groups, academic organizations, and others are encouraged to commit resources for response operations. Specific commitments should be listed in Federal regional and Federal local contingency plans.

(b) It is particularly important to use the valuable technical and scientific information generated by the non-government local community along with those from Federal and State government to assist the OSC in devising clean-up strategies where effective standard techniques are unavailable, and to ensure that pertinent research will be undertaken to meet national needs.

(c) Federal local contingency plans should establish procedures to allow for well-organized, worthwhile, and safe use of volunteers. Local plans should provide for the direction of volunteers by the OSC, or by other Federal, State or local officials knowledgeable in contingency operations and capable of providing leadership. Local plans also should identify specific areas in which volunteers can be used, such as beach surveillance, logistical support, and bird and wildlife treatment. Unless specifically requested by the OSC, volunteers generally should not be used for physical removal or remedial activities. If, in the judgement of the OSC or an appropriate participating agency, dangerous conditions exist, volunteers shall be restricted from on-scene operations.

(d) If any person other than the Federal government or a State or person operating under contract or cooperative agreement with the United States, takes response action and intends to seek reimbursement from the Fund, such actions to be in conformity with this Plan for purposes of section 111(a)(2) of CERCLA may only be undertaken if such person notifies the Administrator of EPA or his/her designee prior to taking such action and receives prior approval to take such action.

Subpart C—Organization.

§ 300.31 Organizational concepts.

Three fundamental kinds of activity are performed pursuant to the Plan: planning and coordination, operations at the scene of a discharge and/or release, and communications. The organizational elements created to perform these activities are discussed below in the context of their roles in these activities.

§ 300.32 Planning and coordination.

(a) National planning and coordination is accomplished through the National Response Team (NRT).

(1) The NRT consists of representatives from the agencies named in § 300.23. Each agency shall designate a member to the team and sufficient alternates to ensure representation, as agency resources permit. Other agencies may request membership on the NRT by forwarding such requests to the chairman of the NRT.

(2) Except for periods of activation because of a response action, the representative of EPA shall be the chairman and the representative of USCG shall be the vice chairman of the NRT. The vice chairman shall maintain records of NRT activities along with national, regional, and local plans for response actions. When the NRT is activated for response action, the chairman shall be the representative of the Federal lead agency.

(3) While the NRT desires to achieve a consensus on all matters brought before it, certain matters may prove unresolvable by this means. In such cases, each cabinet, department or agency serving as a participating agency on the NRT may be accorded one vote in NRT proceedings.

(4) The NRT may establish such by-laws and committees as it deems appropriate to further the purposes for which it is established.

(5) When the NRT is not activated for a response action, it shall serve as a standing committee to evaluate methods of responding to discharges or releases, to recommend needed changes in the response organization and to recommend revisions to this Plan.

(6) The NRT may consider and make recommendations to appropriate agencies on the training, equipping and protection of response teams and necessary research, development, demonstration, and evaluation to improve response capabilities.

(7) Direct planning and preparedness responsibilities of the NRT include:

(i) Maintaining national readiness to respond to a major discharge of oil or release of a hazardous substance or pollutant or contaminant which is beyond regional capabilities;

(ii) Monitoring incoming reports from all RRTs and activating when necessary;

(iii) Reviewing regional responses to oil discharges and hazardous substance releases, including an evaluation of equipment readiness and coordination among responsible public agencies and private organizations; and

(iv) Developing procedures to ensure the coordination of Federal, State, and local governments and private response to oil discharges and releases of hazardous substances, pollutants or contaminants.

(8) The NRT may consider matters referred to it for settlement by an RRT.

(b) The RRT serves as the regional body for planning and preparedness actions before a response action is taken and for coordination and advice during such action. The RRT consists of regional representatives of the participating agencies and representatives of State governments (and local governments as agreed upon with States).

(1) Except when the RRT is activated for a removal incident, the representatives of EPA and USCG shall act as co-chairmen.

(2) Each participating agency should designate one member and at least one alternate member to the RRT. Participating States may also designate one member and at least one alternate member to the Team. All agencies and States may also provide additional representatives as observers to meetings of the RRT.

(3) RRT members should designate representatives from their agencies to work with OSCs in developing Federal local contingency plans, providing for the use of agency resources, and in responding to discharges and releases (see § 300.43).

(4) Federal regional and Federal local plans should adequately provide the OSC with assistance from the Federal agencies commensurate with agencies' resources, capabilities, and responsibilities within the region. During a response action, the members of the RRT should seek to make available the resources of their agencies to the OSC as specified in the Federal regional and Federal local contingency plans.

(5) Affected States are encouraged to participate actively in all RRT activities (see § 300.24(a)), to designate representatives to work with the RRT and OSCs in developing Federal regional and Federal local plans, to plan for and make available State resources, and to serve as the contact point for coordination of response with local government agencies whether or not represented on the RRT.

(6) The RRT serves as a standing committee to recommend changes in the regional response organization as needed, to revise the regional plan as needed, and to evaluate the preparedness of the agencies and the effectiveness of local plans for the Federal response to discharges and releases. The RRT should:

(i) Make continuing review of regional and local responses to discharges or releases, considering available legal remedies, equipment readiness and coordination among responsible public agencies and private organizations.

(ii) Based on observations of response operations, recommend revisions of the National Contingency Plan to the NRT.

(iii) Consider and recommend necessary changes based on continuing review of response actions in the region.

(iv) Review OSC actions to help ensure that Federal regional and Federal local contingency plans are developed satisfactorily.

(v) Be prepared to respond to major discharges or releases outside the region.

(vi) Meet at least semi-annually to review response actions carried out during the preceding period, and consider changes in Federal regional and Federal local contingency plans.

(vii) Provide letter reports on their activities to the NRT twice a year, no later than January 31 and July 31. At a minimum, reports should summarize recent activities, organizational changes, operational concerns, and efforts to improve State and local conditions.

(c) The OSC is responsible for developing any Federal local contingency plans for the Federal response in the area of the OSC's responsibility. This may be accomplished in cooperation with the RRT and designated State and local representatives (see § 300.43). Boundaries for Federal local contingency plans shall coincide with those agreed upon between EPA, DOD and the USCG (subject to Executive Order 12316) to determine OSC areas of responsibility and should be clearly indicated in the regional contingency plan. Where practicable, consideration should be given to jurisdictional boundaries established by State and local plans.

(d) Scientific support for the development of regional and local plans is organized by appropriate agencies to provide special expertise and assistance. Generally, the Scientific Support Coordinator (SSC) for plans encompassing the coastal area will be provided by NOAA, and the SSC for the inland area will be provided by EPA or DOI. This delineation of responsibility may be modified within a region by agreement between DOC, DOI, and EPA representatives to the RRT. SSCs may be obtained from other agencies if determined to be appropriate by the RRT.

§ 300.33 Response operations.

(a) EPA and USCG shall designate OSCs for all areas in each region provided, however, that DOD shall designate OSCs for releases from DOD facilities and vessels. DOD will be the immediate removal response authority with respect to incidents involving DOD military weapons and munitions. Immediate removal actions involving nuclear weapons should be conducted in accordance with the joint Department of Defense, Department of Energy, and Federal Emergency Management Agency Agreement for Response to Nuclear Incidents and Nuclear Weapons Significant Incidents, of January 8, 1981. The USCG will furnish or provide OSCs for oil discharges and for the immediate removal of hazardous substances, pollutants, or contaminants into or threatening the coastal zone except that the USCG will not provide predesignated OSCs for discharges and releases from hazardous waste management facilities or in similarly chronic incidents. EPA shall furnish or provide OSCs for oil discharges and hazardous substance releases into or

threatening the inland zone and, unless otherwise agreed, for all planned removals and remedial actions.

(b) The OSC directs Federal Fund-financed response efforts and coordinates all other Federal efforts at the scene of a discharge or release subject to Executive Order 12316. As part of the planning and preparation for response, the OSCs shall be predesignated by the regional or district head of the lead agency.

(1) The first official from an agency with responsibility under this plan to arrive at the scene of the discharge or release should coordinate activities under this Plan until the OSC arrives.

(2) The OSC shall, to the extent practicable under the circumstances, collect pertinent facts about the discharge or release, such as its source and cause; the existence of potentially responsible parties; the nature, amount, and location of discharged or released materials; the probable direction and time of travel of discharged or released materials; the pathways to human exposure; potential impact on human health, welfare and safety; the potential impact on natural resources and property which may be affected; priorities for protecting human health, welfare and the environment; and appropriate cost documentation.

(3) The OSC shall direct response operations (see Subparts E and F for descriptive details). The OSC's effort shall be coordinated with other appropriate Federal, State, local and private response agencies.

(4) The OSC shall consult regularly with the RRT in carrying out this Plan and will keep the RRT informed of activities under this Plan.

(5) The OSC shall advise the appropriate State agency (as agreed upon with each State) as promptly as possible of reported discharges and releases.

(6) The OSC shall evaluate incoming information and immediately advise FEMA of potential major disaster situations. In the event of a major disaster or emergency, under the Disaster Relief Act of 1974 (Pub. L. 93-288), the OSC will coordinate any response activities with the Federal Coordinating Officer designated by the President. In addition, the OSC should notify FEMA of situations potentially requiring evacuation, temporary housing, and permanent relocation.

(7) In those instances where a possible public health emergency exists, the OSC should notify the HHS representative to the RRT. Throughout response actions, the OSC may call upon the HHS representative for assistance in determining public health threats and for advice on worker health and safety problems.

(8) All Federal agencies should plan for emergencies and develop procedures for dealing with oil discharges and releases of hazardous substances (designated under section 311(b)(2) of the CWA) from vessels and facilities under their jurisdiction. All Federal agencies, therefore, are responsible for designating the offices that can coordinate response to such incidents in accordance with this Plan and applicable Federal regulations and guidelines. If, in the opinion of the OSC, the responsible Federal agency does not act promptly or take appropriate action to respond to a discharge or release caused by a facility or vessels under its jurisdiction, the OSC in charge of area where the discharge or release occurs may conduct appropriate response activities. With respect to discharges or releases from Department of Defense (DOD) facilities and vessels, the OSC shall be furnished by the DOD.

(9) The OSC should advise the affected land managing agency and trustees of natural resources, as promptly as possible, of releases and discharges affecting Federal resources under its jurisdiction.

(10) The OSC is responsible for addressing worker health and safety concerns at a response scene, in accordance with §§ 300.57 and 300.71 of this Plan.

(11) The OSC shall submit pollution reports to the RRC and appropriate agencies as significant developments occur during removal actions.

§ 300.34 Special Forces and Teams.

(a) The National Strike Force (NSF) consists of the Strike Teams established by the USCG on the Atlantic, Pacific and Gulf coasts and includes emergency task forces to provide assistance to the OSC.

(1) The Strike Teams can provide communication support, advice and assistance for oil and hazardous substances removal. These teams also have knowledge of ship salvage, damage control, and diving. Additionally, they are equipped with specialized containment and removal equipment, and have rapid transportation available. When possible, the Strike Teams will train the emergency task forces and assist in the development of regional and local contingency plans.

(2) The OSC may request assistance from the Strike Teams. Requests for a team may be made directly to the Commanding Officer of the appropriate team, the USCG member of the RRT, the appropriate USCG Area Commander, or the Commandant of the USCG through the NRC.

(b) Each USCG OSC manages emergency task forces trained to evaluate, monitor, and supervise pollution responses. Additionally, they have limited "initial aid" response capability to deploy equipment prior to the arrival of a clean-up contractor, or other response personnel.

(c)(1) The Emergency Response Team (ERT) is established by EPA in accordance with its disaster and emergency responsibilities. The ERT includes expertise in biology, chemistry, hydrology, geology and engineering.

(2) It can provide access to special de-contamination equipment for chemical releases and advice to the OSC in hazard evaluation; risk assessment; multimedia sampling and analysis program; on-site safety, including development and implementation plans; clean-up techniques and priorities; water supply de-contamination and protection; application of dispersants; environmental assessment; degree of clean-up required; and disposal of contaminated material.

(3) The ERT also provides both introductory and intermediate level training courses to prepare response personnel.

(4) OSC or RRT requests for ERT support should be made to the EPA representative on the RRT; the EPA Headquarters, Director, Office of Emergency and Remedial Response; or the appropriate EPA regional emergency coordinator.

(d) When requested by the OSC, the SSC shall serve as a member of the OSC's staff and assist the OSC in fulfilling responsibilities in support of response actions. The extent and nature of SSC involvement in the operational mode shall be determined by the OSC. The SSC may:

(1) Coordinate response from the scientific community to OSC requests for assistance and to requests from the OSC, as appropriate, for performance of environmental assessment.

(2) Serve as the principal liaison for scientific advice from the scientific community to the OSC. The SSC shall ensure that differing scientific views within the scientific community are communicated to the OSC in a timely manner.

(3) The SSC will assist in responding to requests for assistance from State and Federal agencies regarding scientific studies and environmental assessments. Details on provision of access to scientific support shall be included in regional contingency plans.

(e) The USCG Public Information Assist Team (PIAT) and the EPA Public Affairs Assist Team (PAAT) may help OSCs and regional or district offices meet the demands for public information and participation during major responses. Requests for these teams may be made through the NRC.

(f)(1) The RRT should be activated by the Chairman as an emergency response team when a discharge or release:

(i) Exceeds the response capability available to the OSC in the place where it occurs;

(ii) Transects regional boundaries; or

(iii) May pose a substantial threat to the public health, welfare or to the environment, or to regionally significant amounts of property. Regional contingency plans shall specify detailed criteria for activation of RRTs.

(2) When the RRT is activated for an immediate removal action, the chairman shall be the representative of the lead agency. When the RRT is activated for a Fund-financed planned removal or remedial action, the chairman shall be the representative of EPA.

(3) The RRT may be activated during any pollution emergency by a request from any RRT representative to the chairman of the Team. Request for RRT activation shall later be confirmed in writing. Each representative, or an appropriate alternate, should be notified immediately when the RRT is activated.

(4) During prolonged removal or remedial action, the RRT may not need to be activated or may need to be activated only in a limited sense, or have available only those members of the RRT who are directly affected or can provide direct response assistance.

(5) When the RRT is activated for a discharge or release, agency representatives shall meet at the call of the chairman and may:

(i) Monitor and evaluate reports from the OSC. The RRT may advise the OSC on the duration and extent of Federal response and may recommend to the OSC specific actions to respond to the discharge or release.

(ii) Request other Federal, State or local government, or private agencies to provide resources under their existing authorities to respond to a discharge or release or to monitor response operations.

(iii) Help the OSC prepare information releases for the public and for communication with the NRT.

(iv) If the circumstances warrant, advise the regional or district head of the agency providing the OSC that a different OSC should be designated.

(v) Submit Pollution Reports (POLREPS) to the NRC as significant developments occur.

(6) When the RRT is activated, affected States may participate in all RRT deliberations. State government representatives participating in the RRT have the same status as any Federal member of the RRT.

(7) The RRT can be deactivated by agreement between the EPA and USCG team members. The time of deactivation should be included in the POLREPS.

(g) The NRT should be activated as an emergency response team when an oil discharge or hazardous substance release:

(1) Exceeds the response capability of the region in which it occurs;

(2) Transects regional boundaries;

(3) Involves significant population hazards or national policy issues, substantial amounts of property, or substantial threats to natural resources; or

(4) Is requested by any NRT member.

(h) When activated for a response action, the NRT shall meet at the call of the chairman and may:

(1) Monitor and evaluate reports from the OSC. The NRT may recommend to the OSC, through the RRT, actions to combat the discharge or release.

(2) Request other Federal, State and local governments, or private agencies, to provide resources under their existing authorities to combat a discharge or release or to monitor response operations.

(3) Coordinate the supply of equipment, personnel, or technical advice to the affected region from other regions or districts.

§ 300.35 Multi-regional responses.

(a) If a discharge or release moves from the area covered by one Federal local or Federal regional contingency plan into another area, the authority for removal or response actions should likewise shift. If a discharge or release or substantial threat of discharge or release affects areas covered by two or more regional plans, the response mechanisms of both may be activated. In this case, removal or response actions of all regions concerned shall be fully coordinated as detailed in the regional plans.

(b) There shall be only one OSC at any time during the course of a response operation. Should a discharge or release affect two or more areas, the EPA, DOD and USCG, as appropriate, shall give prime consideration to the area vulnerable to the greatest damage. The RRT shall designate the OSC if EPA, DOD and USCG members are unable to agree on the designation. The NRT shall designate the OSC if members of one RRT or two adjacent RRTs are unable to agree on the designation.

(c) Where the USCG has provided the OSC for emergency response to a release from hazardous waste management facilities located in the coastal zone, the responsibility for response action shall shift to EPA, in accordance with EPA/USCG agreements.

§ 300.36 Communications.

(a) The NRC is the national communications center for activities related to response actions. It is located at USCG Headquarters in Washington, D.C. The NRC receives and relays notices of discharges or releases to the appropriate OSC, disseminates OSC and RRT reports to the NRT when appropriate, and provides facilities for the NRT to use in coordinating a national response action when required.

(b) The Commandant, USCG, will provide the necessary communications, plotting facilities, and equipment for the NRC.

(c) Notice of an oil discharge or a release of a hazardous substance in an amount equal to or greater than the reportable quantity must be made immediately in accordance with 33 CFR Part 153, Subpart B and section 103(a) of CERCLA, respectively. Notification shall be made to the NRC Duty Officer, HQ USCG, Washington, D.C. telephone (800) 424–8802 (or current local telephone number). All notices of discharges or releases received at the NRC shall be relayed immediately by telephone to the OSC and State.

(d) The RRC provides facilities and personnel for communications, information storage, and other requirements for coordinating response. Each regional plan will specify the location for the RRC.

§ 300.37 Response equipment.

The Spill Cleanup Inventory (SKIM) system is available to help OSCs and RRTs and private parties gain rapid information as to the location of response and support equipment. This inventory is accessible through the NRC and USCG's OSCs. The inventory includes private and commercial equipment, as well as government resources. The RRTs and OSCs shall ensure that data in the system are current and accurate. The USCG is responsible for maintaining and updating the system with RRT and OSC input.

Subpart D—Plans.

§ 300.41 Regional and local plans.

(a) In addition to the National Contingency Plan (NCP), a Federal regional plan shall be developed for

each standard Federal region and, where practicable, a Federal-local plan shall be developed.

(b) These plans will be available for inspection at EPA regional offices or USCG district offices. Addresses and telephone numbers for these offices may be found in the United States Government Manual (issued annually) or in local telephone directories.

§ 300.42 Regional contingency plans.

(a) The RRTs, working with the States, shall develop Federal regional plans for each standard Federal region. The purpose of these plans is coordination of a timely, effective response by various Federal agencies and other organizations to discharges of oil and releases of hazardous substances, pollutants and contaminants in order to protect public health, welfare and the environment. Regional contingency plans should include information on all useful facilities and resources in the region, from government, commercial, academic and other sources. To the greatest extent possible, regional plans will follow the format of the National Contingency Plan.

(b) SSCs shall organize and coordinate the contributions of scientists of each region to the response activities of the OSC and RRT to the greatest extent possible. SSCs, with advice from RRT members, shall also develop the parts of the regional plan that relate to scientific support.

(c) Regional plans shall contain lines of demarcation between the inland and coastal zones, as mutually agreed upon by USCG and EPA.

§ 300.43 Local contingency plans.

(a) Each OSC shall maintain a Federal local plan for response in his or her area of responsibility, where practicable. In areas in which the USCG provides the OSC, such plans shall be developed in all cases. The plan should provide for a well-coordinated response that is integrated and compatible with the pollution response, fire, emergency and disaster plansof local, State and other non-Federal entities. The plan should identify the probable locations of discharges or releases, the available resources to respond to multi-media incidents, where such resources can be obtained, waste disposal methods and facilities consistent with local and State plans developed under the Resource Conservation and Recovery Act (42 U.S.C. 6901 et seq.), and a local structure for responding to discharges or releases.

(b) While the OSC is responsible for developing Federal local plans, a successful planning effort will depend upon the full cooperation of all the agencies' representatives and the development of local capabilities to respond to discharges or releases. Particular attention should be given, during the planning process, to developing a multi-agency local response team for coordinating on-scene efforts. The RRT should ensure proper liaison between the OSC and local representatives.

Subpart E—Operational Response Phases for Oil Removal

§ 300.51 Phase I—Discovery and notification.

(a) A discharge of oil may be discovered through:

(1) A report submitted by the person in charge of the vessel or facility in accordance with statutory requirements;

(2) Deliberate search by patrols; and

(3) Random or incidental observation by government agencies or the public.

(b) Reports of discharges should be made to the NRC or the nearest USCG or EPA office. All reports shall be promptly relayed to the NRC if not previously reported to the responsible OSC. Federal regional and Federal local plans shall provide for prompt reporting to the NRC, RRC, and appropriate State agency (as agreed upon with the State).

(c) Upon receipt of a notification of discharge, the NRC shall promptly notify the OSC. The OSC shall proceed with the following phases as outlined in Federal regional and Federal local plans.

§ 300.52 Phase II—Preliminary assessment and initiation of action.

(a) The OSC for a particular area is responsible for promptly initiating preliminary assessment.

(b) The preliminary assessment shall be conducted using available information, supplemented where necessary and possible by an on-scene inspection. The OSC shall undertake actions to:

(1) Evaluate the magnitude and severity of the discharge or threat to public health and welfare and the environment;

(2) Assess the feasibility of removal;

(3) Determine the existence of potential responsible parties; and

(4) Ensure that jurisdiction exists for undertaking additional response actions.

(c) The OSC, in consultation with legal authorities when appropriate, shall make a reasonable effort to have the discharger voluntarily and promptly perform removal actions. The OSC shall ensure adequate surveillance over whatever actions are initiated. If effective actions are not being taken to eliminate the threat, or if removal is not being properly done, the OSC shall so advise the responsible party. If the responsible party does not take proper removal actions, or is unknown, or is otherwise unavailable, the OSC shall, pursuant to section 311(c)(1) of the CWA, determine whether authority for a Federal response exists, and, if so, take appropriate response actions. Where practicable, continuing efforts should be made to encourage response by responsible parties.

(d) The OSC should ensure that the trustees of affected natural resources are notified, in order that the trustees may initiate appropriate actions when natural resources have been or are likely to be damaged (see Subpart G).

§ 300.53 Phase III—Containment, countermeasures, clean-up, and disposal.

(a) Defensive actions should begin as soon as possible to prevent, minimize, or mitigate damage to the public health or welfare or the environment. Actions may include: analyzing water samples to determine the source and spread of the oil; controlling the source of discharge; measuring and sampling; damage control or salvage operations; placement of physical barriers to deter the spread of the oil or to protect endangered species; control of the water discharged from upstream impoundment; and the use of chemicals and other materials in accordance with Subpart H, to restrain the spread of the oil and mitigate its effects.

(b) Appropriate actions should be taken to recover the oil or mitigate its effects. Of the numerous chemical physical methods that may be used, the chosen methods should be the most consistent with protecting the public health and welfare and the environment. Sinking agents shall not be used.

(c) Oil and contaminated materials recovered in clean-up operations shall be disposed of in accordance with Federal regional and Federal local contingency plans.

§ 300.54 Phase IV—Documentation and cost recovery.

(a) Documentation shall be collected and maintained to support all actions taken under the CWA and to form the basis for cost recovery. In general, documentation should be sufficient to prove the source and circumstances of the incident, the responsible party or parties, and impact and potential impacts to the public health and welfare and the environment. When appropriate, documentation should also be collected for scientific understanding of the environment and for the research and development of improved response

methods and technology. Damages to private citizens (including loss of earnings) are not addressed by this Plan. Evidentiary and cost documentation procedures and requirements are specified in the USCG Marine Safety Manual (Commandant Instruction M16000.3) and 33 CFR Part 153.

(b) The OSC shall ensure the necessary collection and safeguarding of information, samples, and reports. Samples and information must be gathered expeditiously during the response to ensure an accurate record of the impacts incurred. Documentation materials shall be made available to the trustees of affected natural resources where practicable.

(c) Information and reports obtained by the EPA or USCG OSC shall be transmitted to the appropriate offices responsible for follow-up actions.

§ 300.56 General pattern of response.

(a) When the OSC receives a report of a discharge, actions normally should be taken in the following sequence:

(1) Immediately notify the RRT and NRC when the reported discharge is an actual or potential major discharge.

(2) Investigate the report to determine pertinent information such as the threat posed to public health or welfare, or the environment, the type and quantity of polluting material, and the source of the discharge.

(3) Officially classify the size of the discharge and determine the course of action to be followed.

(4) Determine whether a discharger or other person is properly carrying out removal. Removal is being done properly when:

(i) The clean-up is fully sufficient to minimize or mitigate damage to the public welfare (removal efforts are "improper" to the extent that Federal efforts are necessary to prevent further damage).

(ii) The removal efforts are in accordance with applicable regulations and guidelines, including this Plan.

(5) Determine whether a State or political subdivision has the capability to carry out response actions and a contract or cooperative agreement has been established with the appropriate fund administrator for this purpose.

(6) Notify the RRT (including the affected State), SSC, and the trustees of affected natural resources in accordance with the applicable regional plan.

(b) The preliminary inquiry will probably show that the situation falls into one of five classes. These classes and the appropriate response to each are outlined below:

(1) If the investigation shows that no discharge exists, the case shall be considered a false alarm and should be closed.

(2) If the investigation shows a minor discharge with the responsible party taking proper removal action, contact should be established with the party. The removal action should be monitored to ensure continued proper action.

(3) If the investigation shows a minor discharge with improper removal action being taken, the following measures shall be taken:

(i) An immediate effort should be made to stop further pollution.

(ii) The responsible party shall be advised of what action will be so considered appropriate.

(iii) If the responsible party does not properly respond, he shall be notified of his potential liability for Federal response performed under the CWA. This liability includes all costs of removal and may include the costs of assessing and restoring damaged natural resources and other actual or necessary costs of a Federal response.

(iv) The OSC shall notify appropriate State and local officials, keep the RRT advised and initiate Phase III operations as conditions warrant.

(v) Information shall be collected for possible recovery of response costs in accordance with § 300.54.

(4) When the investigation shows that an actual or potential medium oil discharge exists, the OSC shall follow the same general procedures as for a minor discharge. If appropriate, the OSC shall recommend activation of the RRT.

(5) When the investigation shows an actual or potential major oil discharge, the OSC shall follow the same procedures as for minor and medium discharges.

§ 300.56 Pollution reports.

(a) Within 60 days after the conclusion of a major discharge or when requested by the RRT, the EPA or USCG OSC shall submit to the RRT a complete report on the response operation and the actions taken. The OSC shall at the same time send a copy of the report to the NRT. The RRT shall review the OSC's report and prepare an endorsement to the NRT for review. This shall be accomplished within 30 days after the report has been received.

(b) The OSC's report shall accurately record the situation as it developed, the actions taken, the resources committed and the problems encountered. The OSC's recommendations are a source for new procedures and policy.

(c) The format for the OSC's report shall be as follows:

(1) Summary of Events—A chronological narrative of all events, including:

(i) The cause of the discharge;

(ii) The initial situation;

(iii) Efforts to obtain response by responsible parties;

(iv) The organization of the response;

(v) The resources committed;

(vi) The location (water body, State, city, latitude and longitude) of the oil discharge and an indication of whether the discharge was in connection with activities regulated under the Outer Continental Shelf Lands Act (OCSLA), the Trans-Alaska Pipeline Authority Act or Deepwater Port Act; or whether it might have or actually did affect natural resources managed or protected by the U.S.;

(vii) Comments on Federal or State efforts to replace or restore damaged natural resources and damage assessment activities; and

(viii) Details of any threat abatement actions taken under section 311 (c) or (d) of the CWA.

(2) Effectiveness of Removal Actions—A candid and thorough analysis of the effectiveness of removal actions taken by:

(i) The responsible party;

(ii) State and local forces;

(iii) Federal agencies and special forces; and

(iv) (If applicable) contractors, private groups and volunteers.

(3) Problems Encountered—A list of problems affecting response with particular attention to problems of intergovernmental coordination.

(4) Recommendations—OSC recommendations, including at a minimum:

(i) Means to prevent a recurrence of the discharge;

(ii) Improvement of response actions;

(iii) Any recommended changes in the National Contingency Plan or Federal regional plan.

§ 300.57 Special considerations.

(a) *Safety of Personnel*—The OSC should be aware of threats to human health and safety and shall ensure that persons entering the response area use proper precautions, procedures, and equipment and that they possess proper training. Federal local plans shall identify sources of information on anticipated hazards, precautions, and requirements to protect personnel during response operations. Names and phone numbers of people with relevant information shall be included. Responsibility for the safety of all Federal employees rests with the heads of their agencies. Accordingly, each Federal employee on the scene must be apprised of and conform with OSHA regulations and other deemed necessary

by the OSC. All private contractors who are working on-site must conform to applicable provisions of the Occupational Safety and Health Act and standards deemed necessary by the OSC.

(b) *Waterfowl Conservation*—The DOI representative and the State liaison to the RRT shall arrange for the coordination of professional and volunteer groups permitted and trained to participate in waterfowl dispersal, collection, cleaning, rehabilitation and recovery activities (consistent with 16 U.S.C. 703–712 and applicable State laws). Federal regional and Federal local plans will, to the extent practicable, identify organizations or institutions that are permitted to participate in such activities and operate such facilities. Waterfowl conservation activities will normally be included in Phase III response actions (§ 300.53 of this subpart).

§ 300.58 Funding.

(a) If the person responsible for the discharge does not act promptly or take proper removal actions, or if the person responsible for the discharge is unknown, Federal discharge removal actions may begin under section 311(c)(1) of the CWA. The discharger, if known, is liable for the costs of Federal removal in accordance with section 311(f) of the CWA and other Federal laws.

(b) Actions undertaken by the participating agencies in response to pollution shall be carried out under existing programs and authorities when available. This Plan intends that Federal agencies will make resources available, expend funds, or participate in response to oil discharges under their existing authority. Authority to expend resources will be in accordance with agencies' basic statutes and, if required, through interagency agreements. Specific interagency reimbursement agreements may be signed when necessary to ensure that the Federal resources will be available for a timely response to a discharge of oil. The ultimate decision as to the appropriateness of expending funds rests with the agency that is held accountable for such expenditures.

(c) The OSC shall exercise sufficient control over removal operations to be able to certify that reimbursement from the following funds is appropriate:

(1) The oil pollution fund, administered by the Commandant, USCG, has been established pursuant to section 311(k) of the CWA. Regulations governing the administration and use of the fund are contained in 33 CFR Part 153.

(2) The fund authorized by the Deepwater Port Act is administered by the Commandant, USCG. Governing regulations are contained in 33 CFR Parts 136 and 150.

(3) The fund authorized by the Outer Continental Shelf Lands Act, as amended, is administered by the Commandant, USCG. Governing regulations are contained in 33 CFR Parts 136 and 150.

(4) The fund authorized by the Trans-Alaska Pipeline Authorization Act is administered by a Board of Trustees under the purview of the Secretary of the Interior. Governing regulations are contained in 43 CFR Part 29.

(d) Response actions other than removal, such as scientific investigations not in support of removal actions or law enforcement, shall be provided by the agency with legal responsibility for those specific actions.

(e) The funding of a response to a discharge from a Federally operated or supervised facility or vessel is the responsibility of the operating or supervising agency.

(f) The following agencies have funds available for certain discharge removal actions:

(1) EPA may provide funds to begin timely discharge removal actions when the OSC is an EPA representative.

(2) The USCG pollution control efforts are funded under "operating expenses." These funds are used in accordance with agency directives.

(3) The Department of Defense has two specific sources of funds which may be applicable to an oil discharge under appropriate circumstances. (This does not consider military resources which might be made available under specific conditions.)

(i) Funds required for removal of a sunken vessel or similar obstruction of navigation are available to the Corps of Engineers through Civil Works Appropriations, Operations and Maintenance, General.

(ii) The U.S. Navy may conduct salvage operations contingent on defense operational commitments, when funded by the requesting agency. Such funding may be requested on a direct cite basis.

(4) Pursuant to section 311(c)(2)(H) of the CWA, the State or States affected by a discharge of oil, may act where necessary to remove such discharge and may, pursuant to 33 CFR Part 153, be reimbursed from the pollution revolving fund for the reasonable costs incurred in such a removal.

(i) Removal by a State is necessary within the meaning of section 311(c)(2)(H) of the CWA when the OSC determines that the owner or operator of the vessel, onshore facility, or offshore facility from which the discharge occurs does not effect removal properly, or is unknown, and that:

(A) State action is required to minimize or mitigate significant damage to the public health or welfare which Federal action cannot minimize or mitigate, or

(B) Removal or partial removal can be done by the State at a cost which is less than or not significantly greater than the cost which would be incurred by the Federal departments or agencies.

(ii) State removal actions must be in compliance with this Plan in order to qualify for reimbursement.

(iii) State removal actions are considered to be Phase III actions, under the same definitions applicable to Federal agencies.

(iv) Actions taken by local governments in support of Federal discharge removal operations are considered to be actions of the State for purposes of this section. Federal regional and Federal local plans shall show what funds and resources are available from participating agencies under various conditions and cost arrangements. Interagency agreements may be necessary to specify when reimbursement is required.

Subpart F—Hazardous Substance Response

§ 300.61 General.

(a) This subpart establishes methods and criteria for determining the appropriate extent of response authorized by CERCLA when any hazardous substance is released or there is a substantial threat of such a release into the environment, or there is a release or substantial threat of a release into the environment of any pollutant or contaminant which may present an imminent and substantial danger to the public health or welfare

(b) Section 104(a)(1) of CERCLA authorizes removal or remedial action unless it is determined that such removal or remedial action will be done properly by the owner or operator of the vessel or facility from which the release or threat of release emanates, or by any other responsible party.

(c) In determining the need for and in planning or undertaking Fund-financed action, response personnel should, to the extent practicable, consider the following:

(1) Encourage State participation in response actions (see § 300.63).

(2) Conserve Fund monies by encouraging private party clean-up.

(3) Be sensitive to local community concerns (in accordance with applicable guidance).

(4) Rely on established technology when feasible and cost-effective.

(5) Encourage the participation and sharing of technology by industry and other experts.

§ 300.62 State role.

(a) States are encouraged to undertake actions authorized under this subpart. Section 104(d)(1) of CERCLA authorizes EPA to enter into contracts or cooperative agreements with the State to take response actions authorized under CERCLA, when EPA determines that the State has the capability to undertake such actions.

(b) EPA will provide assistance from the Fund to States pursuant to a contract or cooperative agreement. The agreement can authorize States to undertake most actions specified in this Subpart.

(c)(1) Pursuant to section 104(c)(3) of CERCLA, before any Fund-financed remedial action may be taken, the affected State(s) must enter into a contract or cooperative agreement with the Federal government.

(2) Included in such contract or cooperative agreement must be assurances by the State consistent with requirements of section 104(c)(3) of CERCLA.

(d) Prior to remedial design activity, the State must make a firm commitment, through either a cooperative agreement or a new or amended State contract, to provide funding for remedial implementation by:

(1) Authorizing the reduction of a State credit to cover its share of costs;

(2) Identifying currently available funds earmarked for remedial implementation; or

(3) Submitting a plan with milestones for obtaining necessary funds.

(e) State credits allowed under section 104(c)(3) of CERCLA must be documented on a site-specific basis for State out-of pocket, non-Federal eligible response costs between January 1, 1978, and December 11, 1980. Prior to remedial investigation activity at a site, the State must submit its estimate of these costs as a part of the pre-application package when a cooperative agreement is used, or as a part of the State contract. State credits will be applied against State cost shares for Federally-funded remedial actions. A State cannot be reimbursed from the Fund for credit in excess of its matching share.

(f) Pursuant to section 104(c)(2) of CERCLA, prior to determining any appropriate remedial action, EPA shall consult with the affected State or States.

§ 300.63 Phase I—Discovery or notification.

(a) A release may be discovered through:

(1) Notification in accordance with sections 103(a) or (c) of CERCLA;

(2) Investigation by government authorities conducted in accordance with section 104(e) of CERCLA or other statutory authority;

(3) Notification of a release by a Federal or State permit holder when required by its permit;

(4) Inventory efforts or random or incidental observation by government agencies or the public;

(5) Other sources.

(b) If not reported previously, a release should be promptly reported to the NRC. Section 103(a) of CERCLA requires any person in charge of a vessel or facility to immediately notify the NRC as soon as he has knowledge of a release (other than a federally permitted release) of a hazardous substance from such vessel or facility in an amount equal to or greater than the reportable quantity determined pursuant to section 102(b) of CERCLA. The NRC shall convey the notification expeditiously to appropriate government agencies, and in the case of notices received pursuant to section 103(a), the NRC shall also notify the Governor of any affected State.

(c) Upon receipt of a notification of a release, the NRC shall promptly notify the appropriate OSC.

§ 300.64 Phase II—Preliminary assessment.

(a) A preliminary assessment of a release identified for possible CERCLA response should be undertaken by the lead agency. If the reported release potentially requires immediate removal, the preliminary assessment should be done as promptly as possible. Other releases shall be assessed as soon as practicable. The lead agency should base its assessment on readily available information. This assessment may include:

(1) Evaluation of the magnitude of the hazard;

(2) Identification of the source and nature of the release;

(3) Determination of the existence of a non-Federal party or parties ready, willing, and able to undertake a proper response; and

(4) Evaluation of factors necessary to make the determination of whether immediate removal is necessary.

(b) A preliminary assessment of releases from hazardous waste management facilities may include collection or review of data such as site management practices, information from generators, photographs, analysis of historical photographs, literature searches, and personal interviews conducted as appropriate. In addition, a perimeter (off-site) inspection may be necessary to determine the potential for a release. Finally, if more information is needed, a site visit may be performed, if conditions are such that it may be performed safely.

(c) A preliminary assessment should be terminated when the OSC determines:

(1) There is no release;

(2) The source is neither a vessel nor a facility;

(3) The release involves neither a hazardous substance, nor a pollutant or contaminant that may pose an imminent and substantial danger to public health or welfare;

(4) The amount released does not warrant Federal response;

(5) A party responsible for the release, or any other person, is providing appropriate response, and on-scene monitoring by the government is not recommended or approved by the lead agency; or

(6) The assessment is completed.

§ 300.65 Phase III—Immediate removal.

(a) In determining the appropriate extent of action to be taken at a given release, the lead agency shall first review the preliminary assessment to determine if immediate removal action is appropriate. Immediate removal action shall be deemed appropriate in those cases in which the lead agency determines that the initiation of immediate removal action will prevent or mitigate immediate and significant risk of harm to human life or health or to the environment from such situations as:

(1) Human, animal, or food chain exposure to acutely toxic substances;

(2) Contamination of a drinking water supply;

(3) Fire and/or explosion; or

(4) Similarly acute situations.

(b) If the lead agency determines that immediate removal is appropriate, defensive actions should begin as soon as possible to prevent or mitigate danger to the public health, welfare, or the environment. Actions may include, but are not limited to:

(1) Collecting and analyzing samples to determine the source and dispersion of the hazardous substance and documenting those samples for possible evidentiary use.

(2) Providing alternative water supplies.

(3) Installing security fencing or other measures to limit access.

(4) Controlling the source of release.

(5) Measuring and sampling.

(6) Moving hazardous substances off-site for storage, destruction, treatment, or disposal provided that the substances are moved to a facility that is in compliance with subtitle C of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act.

(7) Placing physical barriers to deter the spread of the release.

(8) Controlling the water discharge from an upstream impoundment.

(9) Recommending to appropriate authorities the evacuation of threatened individuals.

(10 Using chemicals and other materials in accordance with Subpart H to restrain the spread of the substance and to mitigate its effects.

(11) Executing damage control or salvage operations.

(c) Immediate removal actions are complete when, in the opinion of the lead agency, the criteria in subsection (a) of § 300.65 are no longer met and any contaminated waste materials transported off-site have been treated or disposed of properly.

(d) Immediate removal action shall be terminated after $1 million has been obligated for the action or six months have elapsed from the date of initial response to a release or threatened release unless it is determined that:

(1) Continued response actions are immediately required to prevent, limit or mitigate an emergency;

(2) There is an immediate risk to public health or welfare or the environment; and

(3) Such assistance will not otherwise be provided on a timely basis.

(e) If the lead agency determines that the release still may require planned removal or remedial action, the lead agency or a State may initiate, either simultaneously or sequentially, Phase IV or V as appropriate.

§ 300.66 Phase IV—Evaluation and determination of appropriate response—planned removal and remedial action.

(a) The purpose of this phase is to determine the appropriate action when the preliminary assessment indicates that further response may be necessary or when the OSC requests and the lead agency concurs that further response should follow an immediate removal action.

(b) As soon as practicable, an inspection will be undertaken to assess the nature and extent of the release and to assist in determining its priority for Fund-financed response.

(c)(1) Pursuant to section 104 (b) and (e) of CERCLA, the responsible official may undertake investigations, monitoring, surveys, testing and other information gathering as appropriate. These efforts shall be undertaken jointly by the Federal or State officials responsible for providing Fund-financed response and those responsible for enforcing legal requirements.

(2) A major objective of an inspection is to determine if there is any immediate danger to persons living or working near the facility. In general, the collection of samples should be minimized during inspection activities; however, situations in which there is an apparent risk to the public should be treated as exceptions to that practice. Examples of apparent risk include use of nearby wells for drinking water, citizen complaints of unusual taste or odor in drinking water, or chemical odors or unusual health problems in the vicinity of the release. Under those circumstances, a sampling protocol should be developed for the inspection to allow for the earliest possible detection of any human exposure to hazardous substances. The site inspection may also address:

(i) Determining the need for immediate removal action;

(ii) Assessing amounts, types and location of hazardous substances stored;

(iii) Assessing potential for substances to migrate from areas where they were originally located;

(iv) Determining or documenting immediate threats to the public or environment.

(d) *Methods for Establishing Priorities.* (1) States that wish to submit candidates for the National Priorities List must use the Hazard Ranking System (included in Appendix A) to rank the releases.

(2) EPA will notify States at least thirty days prior to the deadline for submitting candidate releases for the National Priorities List or any subsequent revisions.

(3) Each State may designate a facility as the State's highest priority release by certifying, in writing signed by the Governor or the Governor's designee, that the facility presents the greatest danger to public health, welfare or the environment among known facilities in the State.

(e) *National Priorities List.* (1) Compiling the National Priorities List—EPA Regional Office will review State hazard rankings to ensure uniform application of the Hazard Ranking System and may add, in consultation with the States, any additional priority releases known to EPA. The States' priorities will be reviewed and consolidated by EPA Headquarters into a National Priorities List pursuant to section 105(8) of CERCLA. To the extent practicable, each State's designated top priority facility will be included among the one hundred highest priority facilities.

(2) No facilities presently owned by the Federal Government will be included on the National Priorities List.

(3) EPA will submit the recommended National Priorities List to the NRT for review and comment.

(4) EPA will publish a proposed National Priorities List for public comment.

(5) The National Priorities List is presented in Appendix B.

(6) Ranking of Releases—Similar hazard ranking scores assigned to releases cannot accurately differentiate among risks represented by the releases. Thus, in order to avoid misleading the public that real differences in risk exist, similar scores may be grouped on the National Priorities List.

(7) EPA will revise and publish the National Priorities List at least once annually. In addition, revisions will give notice of the deletion (if any) of releases previously listed.

§ 300.67 Phase V—Planned removal.

(a) Planned removal may be undertaken pursuant to a contract or cooperative agreement when the lead agency determines that:

(1) There would be a substantial cost savings by continuing a response action with the equipment and resources mobilized for an immediate removal action taken pursuant to § 300.64, but terminate pursuant to § 300.64(c); or

(2) The public and/or environment will be at risk from exposure to hazardous substances if response is delayed at a release not on the National Priorities List.

(b) Planned removal must be requested by the Governor of the affected State or his designee. Requests must include:

(1) A description of the nature and extent of the release;

(2) A description of actions taken or underway at the site;

(3) A description of the proposed planned removal; and

(4) Assurances that the State will pay at least 10 percent of the costs of the action, including all future maintenance, or at least 50 percent or such greater amount as EPA may determine appropriate, taking into account the degree of responsibility of the State or political subdivision, of any sums expended in response to a release at a facility that was owned at the time of any disposal of hazardous substances therein by the State or a political subdivision thereof.

(c) Among the factors that EPA will use to determine whether a planned removal is appropriate under § 300.67(a)(2) are the following:

(1) Actual or potential direct contact with hazardous substances by nearby population;

(2) Contaminated drinking water at the tap;

(3) Hazardous substances in drums, barrels, tanks, or other bulk storage containers, that are known to pose a serious threat to public health or the environment;

(4) Highly contaminated soils largely at or near surface, posing a serious threat to public health or the environment;

(5) Serious threat of fire or explosion; or

(6) Weather conditions that may cause substances to migrate and pose a serious threat to public health or the environment.

(d) Planned removal actions shall be terminated when the lead agency determines that the risk to the public health or the environment has been abated. In making this determination, the lead agency shall consider whether the factors listed in § 300.66(c) continue to apply to the release and whether any contaminated waste materials transported off-site have been treated or disposed of properly.

(e) Unless the EPA finds that (1) continued response actions are immediately required to prevent, limit or mitigate an emergency, (2) there is an immediate risk to public health or welfare or the environment, and (3) such assistance will not otherwise be provided on a timely basis, obligations from the Fund, other than those authorized by section 104(b) of CERCLA, shall not continue after $1 million has been obligated for response actions or six months has elapsed from the date of initial response to the release.

§ 300.68 Phase VI—Remedial action.

(a) Remedial actions taken pursuant to this section (other than responses at Federal facilities) are those responses to releases on the National Priorities List that are consistent with permanent remedy to prevent or mitigate the migration of a release of hazardous substances into the environment.

(b) States are encouraged to undertake Fund-financed remedial actions in accordance with § 300.62 of this Plan.

(c) As an alternative or in addition to Fund-financed remedial action, the lead agency may seek, through voluntary agreement or administrative or judicial process, to have those persons responsible for the release clean up in a manner that effectively mitigates and minimizes damage to, and provides adequate protection of, public health, welfare, and the environment. The lead agency shall evaluate the adequacy of clean-up proposals submitted by responsible parties or determine the level of clean-up to be sought through enforcement efforts, by consideration of the factors discussed in paragraphs (e) through (j) of this section. The lead agency will not, however, apply the cost balancing considerations discussed in paragraph (k) of this section to determine the appropriate extent of responsible party clean-up.

(d)(1) The lead agency, in cooperation with State(s), will examine available information and determine, based on the factors in paragraph (g) of this section, the type or types of remedial response that may be needed to remedy the release. This scoping will serve as the basis for requesting funding for a remedial investigation and feasibility study:

(i) In the case of initial remedial measures, a single request may be made by a State for funding the remedial investigation, feasibility study, design and implementation, in order that such measures may be expedited while continuing the remainder of the remedial planning process.

(ii) In the case of source control or off-site remedial action, the initial funding request should be for the remedial investigation and feasibility study. Requests for funding of design and implementation should be made after the completion of the feasibility study.

(2) As a remedial investigation progresses, the project may be modified if the lead agency determines that, based on the factors in 300.68(e), such modifications would be appropriate.

(e) In determining the appropriate extent of remedial action, the following factors should be used to determine the type or types of remedial action that may be appropriate:

(1) In some instances, initial remedial measures can and should begin before final selection of an appropriate remedial action if such measures are determined to be feasible and necessary to limit exposure or threat of exposure to a significant health or environmental hazard and if such measures are cost-effective. Compliance with § 300.67(b) is a prerequisite to taking initial remedial measures. The following factors should be used in determining whether initial remedial measures are appropriate:

(i) Actual or potential direct contact with hazardous substances by nearby population. (Measures might include fences and other security precautions.)

(ii) Absence of an effective drainage control system (with an emphasis on run-on control). (Measures might include drainage ditches.)

(iii) Contaminated drinking water at the tap. (Measures might include the temporary provision of an alternative water supply.)

(iv) Hazardous substances in drums, barrels, tanks, or other bulk storage containers, above surface posing a serious threat to public health or the environment. (Measures might include transport of drums off-site.)

(v) Highly contaminated soils largely at or near surface, posing a serious threat to public health or the environment. (Measures might include temporary capping or removal of highly contaminated soils from drainage areas.)

(vi) Serious threat of fire or explosion or other serious threat to public health or the environment. (Measures might include security or drum removal.)

(vii) Weather conditions that may cause substances to migrate and to pose a serious threat to public health or the environment. (Measures might include stabilization of berms, dikes or impoundments.)

(2) Source control remedial actions may be appropriate if a substantial concentration of hazardous substances remain at or near the area where they were originally located and inadequate barriers exist to retard migration of substances into the environment. Source control remedial actions may not be appropriate if most substances have migrated from the area where originally located or if the lead agency determines that the substances are adequately contained. Source control remedial actions may include alternatives to contain the hazardous substances where they are located or eliminate potential contamination by transporting the hazardous substances to a new location. The following criteria should be assessed in determining whether and what type of source control remedial actions should be considered:

(i) The extent to which substances pose a danger to public health, welfare, or the environment. Factors which should be considered in assessing this danger include:

(A) Population at risk;

(B) Amount and form of the substance present;

(C) Hazardous properties of the substances;

(D) Hydrogeological factors (e.g. soil permeability depth to saturated zone, hydrologic gradients, proximity to a drinking water aquifer); and

(E) Climate (rainfall, etc.).

(ii) The extent to which substances have migrated or are contained by either natural or man-made barriers.

(iii) The experiences and approaches used in similar situations by State and Federal agencies and private parties.

(iv) Environmental effects and welfare concerns.

(3) In some situations it may be appropriate to take action (referred to as offsite remedial actions) to minimize and mitigate the migration of hazardous substances and the effects of such migration. These actions may be taken when the lead agency determines that source control remedial actions may not effectively mitigate and minimize the threat and there is a significant threat to public health, welfare, or the environment. These situations typically will result from contamination that has migrated beyond the area where the hazardous substances were originally located. Offsite measures may include provision of permanent alternative water supplies, management of a drinking water aquifer plume or treatment of drinking water aquifers. The following criteria should be used in determining whether and what type of offsite remedial actions should be considered:

(i) Contribution of the contamination to an air, land or water pollution problem.

(ii) The extent to which the substances have migrated or are expected to migrate from the area of their original location and whether continued migration may pose a danger to public health, welfare or environment.

(iii) The extent to which natural or man-made barriers currently contain the hazardous substances and the adequacy of the barriers.

(iv) The factors listed in paragraph (e)(2)(i) of this section.

(v) The experiences and approaches used in similar situations by State and Federal agencies and private parties.

(iv) Environmental effects and welfare concerns.

(f) A remedial investigation should be undertaken by the lead agency (or responsible party if the responsible party will be developing a clean-up proposal) to determine the nature and extent of the problem presented by the release. This includes sampling and monitoring, as necessary, and includes the gathering of sufficient information to determine the necessity for and proposed extent of remedial action. During the remedial investigation, the original scoping of the project may be modified based on the factors in § 300.68(e). Part of the remedial investigation involves assessing whether the threat can be mitigated and minimized by controlling the source of the contamination at or near the area where the hazardous substances were originally located (source control remedial actions) or whether additional actions will be necessary because the hazardous substances have migrated from the area of their original location (offsite remedial actions).

(g) *Development of Alternatives.* A limited number of alternatives should be developed for either source control or offsite remedial actions (or both) depending upon the type of response that has been identified under paragraphs (e) and (f) of this section as being appropriate. One alternative may be a no-action alternative. No-action alternatives are appropriate, for example, when response action may cause a greater environmental or health danger than no action. These alternatives should be developed based upon the assessment conducted under paragraphs (e) and (f) of this section and reflect the types of source control or offsite remedial actions determined to be appropriate under paragraphs (e) and (f) of this section.

(h) *Initial Screening of Alternatives.* The alternatives developed under paragraph (g) of this section will be subjected to an initial screening to narrow the list of potential remedial actions for further detailed analysis. Three broad criteria should be used in the initial screening of alternatives:

(1) *Cost.* For each alternative, the cost of installing or implementing the remedial action must be considered, including operation and maintenance costs. An alternative that far exceeds (e.g. by an order of magnitude) the costs of other alternatives evaluated and that does not provide substantially greater public health or environmental benefit should usually be excluded from further consideration.

(2) *Effects of the Alternative.* The effects of each alternative should be evaluated in two ways: (i) Whether the alternative itself or its implementation has any adverse environmental effects; and (ii) for source control remedial actions, whether the alternative is likely to achieve adequate control of source material, or for offsite remedial actions, whether the alternative is likely to effectively mitigate and minimize the threat of harm to public health, welfare or the environment. If an alternative has significant adverse effects, it should be excluded from further consideration. Only those alternatives that effectively contribute to protection of public health, welfare, or the environment should be considered further.

(3) *Acceptable Engineering Practices.* Alternatives must be feasible for the location and conditions of the release, applicable to the problem, and represent a reliable means of addressing the problem.

(i) *Detailed Analysis of Alternatives.*

(1) A more detailed evaluation will be conducted of the limited number of alternatives that remain after the initial screening in paragraph (h).

(2) The detailed analysis of each alternative should include:

(A) Refinement and specification of alternatives in detail, with emphasis on use of established technology;

(B) Detailed cost estimation, including distribution of costs over time;

(C) Evaluation in terms of engineering implementation, or constructability;

(D) An assessment of each alternative in terms of the extent to which it is expected to effectively mitigate and minimize damage to, and provide adequate protection of, public health, welfare, and the environment, relative to the other alternatives analyzed; and

(E) An analysis of any adverse environmental impacts, methods for mitigating these impacts, and costs of mitigation.

(3) In performing the detailed analysis of alternatives, it may be necessary to gather additional data in order to complete the analysis.

(j) The appropriate extent of remedy shall be determined by the lead agency's selection of the remedial alternative which the agency determines is cost-effective (i.e. the lowest cost alternative that is technologically feasible and reliable and which effectively mitigates and minimizes damage to and provides adequate protection of public health, welfare, or the environment).

(k) Section 104(c)(4) of CERCLA requires that the need for protection of public health, welfare and the environment at the facility under consideration be balanced against the amount of money available in the Fund to respond to other sites which present or may present a threat to public health or welfare or the environment, taking into consideration the need for immediate action. Accordingly, in determining the appropriate extent of remedy for Fund-financed response, the lead agency also must consider the need to respond to other releases with Fund monies.

§ 300.69 Phase VII—Documentation and cost recovery.

(a) During all phases, documentation shall be collected and maintained to support all actions taken under this Plan, and to form the basis for cost recovery. In general, documentation should be sufficient to provide the

source and circumstances of the condition, the identity of responsible parties, accurate accounting of Federal costs incurred, and impacts and potential impacts to the public health, welfare and environment.

(b) The information and reports obtained by the lead agency for Fund-financed response action should be transmitted to the RRC. Copies can then be forwarded to the NRT, members of the RRT, and others as appropriate.

§ 300.70 Methods of remedying releases.

(a) The following section lists methods for remedying releases that may be considered by the lead agency in taking response action. This list of methods should not be considered inclusive of all possible methods of remedying releases.

(b) *Engineering Methods for On-Site Actions.*—(1)(i) *Air emissions control*—The control of volatile gaseous compounds should address both lateral movement and atmospheric emissions. Before gas migration controls can be properly installed, field measurements to determine gas concentrations, pressures, and soil permeabilities should be used to establish optimum design for control. In addition, the types of hazardous substances present, the depth to which they extend, the nature of the gas and the subsurface geology of the release area should, if possible, be determined. Typical emission control techniques include the following:

(A) Pipe vents;
(B) Trench vents;
(C) Gas barriers;
(D) Gas collection systems;
(E) Overpacking.

(ii) *Surface water controls*—These are remedial techniques designed to reduce waste infiltration and to control runoff at release areas. They also serve to reduce erosion and to stabilize the surface of covered sites. These types of control technologies are usually implemented in conjunction with other types of controls such as the elimination of ground water infiltration and/or waste stabilization, etc. Technologies applicable to surface water control include the following:

(A) Surface seals;
(B) Surface water diversion and collection systems:
(*1*) Dikes and berms;
(*2*) Ditches, diversions, waterways;
(*3*) Chutes and downpipes;
(*4*) Levees;
(*5*) Seepage basins and ditches;
(*6*) Sedimentation basins and ponds;
(*7*) Terraces and benches.
(C) Grading;
(D) Revegetation.

(iii) *Ground water controls*—Ground water pollution is a particularly serious problem because, once an aquifer has been contaminated, the resource cannot usually be cleaned without the expenditure of great time, effort and resources. Techniques that can be applied to the problem with varying degrees of success are as follows:

(A) Impermeable barriers:
(*1*) Slurry walls;
(*2*) Grout curtains;
(*3*) Sheet pilings.
(B) Permeable treatment beds;
(C) Ground water pumping:
(*1*) Water table adjustment;
(*2*) Plume containment.
(D) Leachate control—Leachate control systems are applicable to control of surface seeps and seepage of leachate to ground water. Leachate collection systems consist of a series of drains which intercept the leachate and channel it to a sump, wetwell, treatment system, or appropriate surface discharge point. Technologies applicable to leachate control include the following:
(*1*) Subsurface drains;
(*2*) Drainage ditches;
(*3*) Liners.

(iv) *Contaminated water and sewer lines*—Sanitary sewers and municipal water mains located down gradient from hazardous waste disposal sites may become contaminated by infiltration of leachate or polluted ground water through cracks, ruptures, or poorly sealed joints in piping. Technologies applicable to the control of such contamination to water and sewer lines include:

(A) Grouting;
(B) Pipe relining and sleeving;
(C) Sewer relocation.

(2) *Treatment technologies.* (i) *Gaseous emissions treatment*—Gases from waste disposal sites frequently contain malodorous and toxic substances, and thus require treatment before release to the atmosphere. There are two basic types of gas treatment systems:

(A) Vapor phase adsorption;
(B) Thermal oxidation.

(ii) *Direct waste treatment methods*—In most cases, these techniques can be considered long-term permanent solutions. Many of these direct treatment methods are not fully developed and the applications and process reliability are not well demonstrated. Use of these techniques for waste treatment may require considerable pilot plant work. Technologies applicable to the direct treatment of wastes are:

(A) Biological methods:
(*1*) Treatment via modified conventional wastewater treatment techniques;
(*2*) Anaerobic, aerated and facultative lagoons;
(*3*) Supported growth biological reactors.
(B) Chemical methods:
(*1*) Chlorination;
(*2*) Precipitation, flocculation, sedimentation;
(*3*) Neutralization;
(*4*) Equalization;
(*5*) Chemical oxidation.
(C) Physical methods:
(*1*) Air stripping;
(*2*) Carbon absorption;
(*3*) Ion exchange;
(*4*) Reverse osmosis;
(*5*) Permeable bed treatment;
(*6*) Wet air oxidation;
(*7*) Incineration.

(iii) *Contaminated soils and sediments*—In some cases where it can be shown to be cost-effective, contaminated sediments and soils will be treated on the site. Technologies available include:

(A) Incineration;
(B) Wet air oxidation;
(C) Solidification;
(D) Encapsulation;
(E) In situ treatment:
(*1*) Solution mining, (soil washing or soil flushing);
(*2*) Neutralization/detoxification;
(*3*) Microbiological degradation.

(c) *Offsite Transport for Storage, Treatment, Destruction or Secure Disposition.*—(1) *General*—Offsite transport or storage, treatment, destruction, or secure disposition offsite may be provided in cases where EPA determines that such actions:

(i) Are more cost-effective than other forms of remedial actions;

(ii) Will create new capacity to manage, in compliance with Subtitle C of the Solid Waste Disposal Act, hazardous substances in addition to those located at the affected facility; or

(iii) Are necessary to protect public health, welfare, or the environment from a present or potential risk which may be created by further exposure to the continued presence of such substances or materials.

(2) *Contaminated soils and sediments may be removed from the site.* Technologies used to remove contaminated sediments on soils include:

(i) Excavation;
(ii) Hydraulic dredging;
(iii) Mechanical dredging.

(d) *Provision of Alternative Water Supplies*—Alternative water supplies can be provided in several ways:

(1) Provision of individual treatment units;
(2) Provision of water distribution system;
(3) Provision of new wells in a new location or deeper wells;
(4) Provision of cisterns;
(5) Provision of bottled or treated water;
(6) Provision of upgraded treatment for existing distribution systems.

(e) *Relocation*—Permanent relocation of residents, businesses, and community facilities may be provided where it is determined that human health is in danger and that, alone or in combination with other measures, relocation would be cost-effective and environmentally preferable to other remedial response. Temporary relocation may also be taken in appropriate circumstances.

§ 300.71 Worker health and safety.

Lead agency personnel should be aware of hazards, due to a release of hazardous substances, to human health and safety and exercise great caution in allowing civilian or government personnel into an affected area until the nature of the release has been ascertained. Accordingly, the OSC or responsible official must conform to applicable OSHA requirements and other guidance. All private contractors who are working at the scene of a release must conform to applicable provisions of the Occupational Safety and Health Act and any other requirements deemed necessary by the lead agency.

Subpart G—Trustees for Natural Resources.

§ 300.72 Designation of Federal trustees.

When natural resources are lost or damaged as a result of a discharge of oil or release of a hazardous substance, the following officials are designated to act as Federal trustees pursuant to section 111(h)(1) of CERCLA for purposes of sections 111(h)(1), 111(b) and 107(f) of CERCLA:

(a)(1) *Natural Resource Loss.* Damage to resources of any kind located on, over or under land subject to the management or protection of a Federal land managing agency, other than land or resources in or under United States waters that are navigable by deep draft vessels, including waters of the contiguous zone and parts of the high seas to which the National Contingency Plan is applicable and other waters subject to tidal influence.

(2) *Trustee.* The head of the Federal land managing agency, or the head of any other single entity designated by it to act as trustee for a specific resource.

(b)(1) *Natural Resource Loss.* Damage to fixed or non-fixed resources subject to the management or protection of a Federal agency, other than land in resources in or under United States waters that are navigable by deep draft vessels, including waters of the contiguous zone and parts of the high seas to which the National Contingency Plan is applicable and other waters subject to tidal influence.

(2) *Trustee.* The head of the Federal agency authorized to manage or protect these resources by statute, or the head of any other single entity designated by it to act as trustee for a specific resource.

(c)(1) *Natural Resource Loss.* Damage to resource of any kind subject to the management or protection of a Federal agency and lying in or under United States waters that are navigable by deep draft vessels, including waters of the contiguous zone and parts of the high seas to which the National Contingency Plan is applicable and other waters subject to tidal influence, and upland areas serving as habitat for marine mammals and other species subject to the protective jurisdiction of NOAA.

(2) *Trustee.* The Secretary of Commerce or the head of any other single Federal entity designated by it to act as trustee for a specific resource; provided, however, that where resources are subject to the statutory authorities and jurisdictions of the Secretaries of the Departments of Commerce or the Interior, they shall act as co-trustees.

(d)(1) *Natural Resource Loss.* Damages to natural resources protected by treaty (or other authority pertaining to Native American tribes) or located on lands held by the United States in trust for Native American communities or individuals.

(2) *Trustee.* The Secretary of the Department of the Interior, or the head of any other single Federal entity designated by it to act as trustee for specific resources.

§ 300.73 State trustees.

Pursuant to section 111(h)(1) of CERCLA and for purposes of sections 111(h)(1), 111(b) and 107(f) of CERCLA, States may act as trustee for damage to resources within the boundary of a State belonging to, managed by, controlled by, or appertaining to such State.

§ 300.74 Responsibilities of trustees.

(a) The Federal trustees for natural resources shall be responsible for assessing damages to the resources in accordance with regulations promulgated under section 301(c) of CERCLA, seeking recovery for the losses from the person responsible or from the Fund, and devising and carrying out restoration, rehabilitation and replacement plans pursuant to CERCLA.

(b) Where there are multiple trustees, because of co-existing or contiguous natural resources or concurrent jurisdictions, they shall coordinate and cooperate in carrying out these responsibilities.

Subpart H—Use of Dispersants and Other Chemicals

§ 300.81 General.

(a) Section 311(c)(2)(G) of the Clean Water Act requires that EPA prepare a schedule of dispersants and other chemicals, if any, that may be used in carrying out the plan.

(b) The OSC, with the concurrence of the EPA representative to the RRT and in consultation with the States, may authorize the use of dispersants and other chemicals on oil spills; provided, however, that such dispersants and other chemicals must be on the list of accepted dispersants prepared by EPA.

(c) In the case of dispersants and other chemicals not included on the list of accepted dispersants, EPA will continue to authorize use on a case-by-case basis. Case-by-case approvals will be made by the Administrator or her designee.

Appendix A—Uncontrolled Hazardous Waste Site Ranking Sustem; A Users Manual

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1.0 Introduction

The Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) (Pub. L. 96-510) requires the President to identify the 400 facilities in the nation warranting the highest priority for remedial action. In order to set the priorities, CERCLA requires that criteria be established based on relative risk or danger, taking into account the population at risk; the hazardous potential of the substances at a facility; the potential for contamination of drinking water supplies, for direct human contact, and for destruction of sensitive ecosystems; and other appropriate factors.

This document describes the Hazard Ranking System (HRS) to be used in evaluating the relative potential of uncontrolled hazardous substance facilities to cause health or safety problems, or ecological or environmental damage. Detailed instructions for using the HRS are given in the following sections. Uniform application of the ranking system in each State will permit EPA to identify those releases of hazardous substances that pose the greatest hazard to humans or the environment. However, the HRS by itself cannot establish priorities for the allocation of funds for remedial action. The HRS is a means for applying uniform technical judgment regarding the potential hazards presented by a facility relative to other facilities. It does not address the feasibility, desirability, or degree of cleanup required. Neither does it deal with the readiness or ability of a State to carry out such remedial action as may be indicated, or to meet other conditions prescribed in CERCLA.

The HRS assigns three scores to a hazardous facility:

- S_M reflects the potential for harm to humans or the environment from migration of a hazardous substance away from the facility by routes involving ground water, surface water, or air. It is a composite of separate scores for each of the three routes.
- S_{FE} reflects the potential for harm from substances that can explode or cause fires.
- S_{DC} reflects the potential for harm from direct contact with hazardous substances at the facility (i.e., no migration need be involved).

The score for each hazard mode (migration, fire and explosion and direct contact) or route is obtained by considering a set of factors that characterize the potential of the facility to cause harm (Table 1). Each factor is assigned a numerical value (on a scale of 0 to 3, 5 or 8) according to prescribed guidelines. This value is then multiplied by a weighting factor yielding the factor score. The factor scores are then combined: scores within a factor category are added; then the total scores for each factor category are multiplied together to develop a score for ground water, surface water, air, fire and explosion, and direct contact.

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TABLE 1

COMPREHENSIVE LIST TO RATING FACTORS

HAZARD MODE	FACTOR CATEGORY	FACTORS		
		GROUND WATER ROUTE	SURFACE WATER ROUTE	AIR ROUTE
Migration	Route Characteristics	• Depth to Aquifer of Concern • Net Precipitation • Permeability of Unsaturated Zone • Physical State	• Facility Slope and Intervening Terrain • One-Year 24-Hour Rainfall • Distance to Nearest Surface Water • Physical State	
	Containment	• Containment	• Containment	
	Waste Characteristics	• Toxicity/Persistence • Hazardous Waste Quantity	• Toxicity/Persistence • Hazardous Waste Quantity	• Reactivity/Incompatibility • Toxicity • Hazardous Waste Quantity
	Targets	• Ground Water Use • Distance to Nearest Well/ Population Served	• Surface Water Use • Distance to Sensitive Environment • Population Served/Distance to Water Intake Downstream	• Land Use • Population Within 4-Mile Radius • Distance to Sensitive Environment
Fire and Explosion	Containment	• Containment		
	Waste Characteristics	• Direct Evidence • Ignitability • Reactivity • Incompatibility • Hazardous Waste Quantity		
	Targets	• Distance to Nearest Population • Distance to Nearest Building • Distance to Nearest Sensitive Environment • Land Use • Population Within 2-Mile Radius • Number of Buildings Within 2-Mile Radius		
Direct Contact	Observed Incident	• Observed Incident		
	Accessibility	• Accessibility of Hazardous Substances		
	Containment	• Containment		
	Toxicity	• Toxicity		
	Targets	• Population Within 1-Mile Radius • Distance to Critical Habitat		

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In computing S_{fs} or S_{DC}, or an individual migration route score, the product of its factor category scores is divided by the maximum possible score, and the resulting ratio is multiplied by 100. The last step puts all scores on a scale of 0 to 100.

S_M is a composite of the scores for the three possible migration routes:

$$S_M = \frac{1}{1.73}\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$$

where:
S_{gw} = ground water route score
S_{sw} = surface water route score
S_a = air route score

The effect of this means of combining the route scores is to emphasize the primary (highest scoring) route in aggregating route scores while giving some additional consideration to the secondary or tertiary routes if they score high. The factor 1/1.73 is used simply for the purpose of reducing S_M scores to a 100-point scale.

The HRS does not quantify the probability of harm from a facility or the magnitude of the harm that could result, although the factors have been selected in order to approximate both those elements of risk. It is a procedure for ranking facilities in terms of the potential threat they pose by describing:

- The manner in which the hazardous substances are contained,
- The route by which they would be released,
- The characteristics and amount of the harmful substances, and
- The likely targets.

The multiplicative combination of factor category scores is an approximation of the more rigorous approach in which one would express the hazard posed by a facility as the product of the probability of a harmful occurrence and the magnitude of the potential damage.

The ranking of facilities nationally for remedial action will be based primarily on S_M. S_{fs} and S_{DC} may be used to identify facilities requiring emergency attention.

2.0 Using the Hazard Ranking System—General Considerations

Use of the HRS requires considerable information about the facility, its surroundings, the hazardous substances present, and the geological character of the area down to the aquifers that may be at risk.

Figure 1 illustrates a format for recording general information regarding the facility being evaluated. It can also serve as a cover sheet for the work sheets used in the evaluation.

Where there are no data for a factor, it should be assigned a value of zero. However, if a factor with no data is the only factor in a category (e.g., containment), then the factor is given a score of 1. If data are lacking for more than one factor in connection with the evaluation of either S_{gw}, S_{sw}, S_a, S_{fs}, or S_{DC}, that route score is set at zero.

The following sections give detailed instructions and guidance for rating a facility. Each section begins with a work sheet designed to conform to the sequence of steps required to perform the rating. Guidance for evaluating each of the factors then follows. Using the guidance provided, attempt to assign a score for each of the three possible migration routes. Bear in mind that if data are missing for more than one factor in connection with the evaluation of a route, then you must set that route score at 0 (i.e., there is no need to assign scores to factors in a route that will be set at 0).

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Facility name: _____

Location: _____

EPA Region: _____

Person(s) in charge of the facility: _____

_____

_____

Name of Reviewer: _____ Date: _____

General description of the facility:

(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

_____

_____

_____

_____

_____

_____

_____

Scores: S_M = (S_{gw} = S_{sw} = S_a =)

S_{FE} =

S_{DC} =

FIGURE 1
HRS COVER SHEET

BILLING CODE 6560-50-C

3.0 Ground Water Migration Route

3.1 *Observed Release.* If there is direct evidence of release of a substance of concern from a facility to ground water, enter a score of 45 on line 1 of the work sheet for the ground water route (Figure 2); then you need not evaluate route characteristics and containment factors (lines 2 and 3). Direct evidence of release must be analytical. If a contaminant is measured (regardless of frequency) in ground water or in a well in the vicinity of the facility at a significantly (in terms of demonstrating that a release has occurred, not in terms of potential effects) higher level than the background level, then quantitative evidence exists, and a release has been observed. Qualitative evidence of release (e.g., an oily or otherwise objectionable taste or smell in well water) constitutes direct evidence only if it can be confirmed that it results from a release at the facility in question. If a release has been observed, proceed to "3.4 *Waste Characteristics*" to continue scoring. If direct evidence is lacking, enter a value of 0 on line 1 and continue the scoring procedure by evaluating *Route Characteristics.*

3.2 *Route Characteristics. Depth to aquifer of concern* is measured vertically from the lowest point of the hazardous substances to the highest seasonal level of the saturated zone of the aquifer of concern (Figure 3). This factor is one indicator of the ease with which a pollutant from the facility could migrate to ground water. Assign a value as follows:

Distance (feet)	Assigned value
>150	0
76 to 150	1
21 to 75	2
0 to 20	3

Net precipitation (precipitation minus evaporation) indicates the potential for leachate generation at the facility. Net seasonal rainfall (seasonal rainfall minus seasonal evaporation) data may be used if available. If net precipitation is not measured in the region in which the facility is located, calculate it by subtracting the mean annual lake evaporation for the region (obtained from Figure 4) from the normal annual precipitation for the region (obtained from Figure 5). EPA Regional Offices will have maps for areas outside the continental U.S. Assign a value as follows:

Net precipitation (inches)	Assigned value
< −10	0
−10 to +5	1
+5 to +15	2
>+15	3

Permeability of unsaturated zone (or intervening geological formations) is an indicator of the speed at which a contaminant could migrate from a facility. Assign a value from Table 2.

TABLE 2.—PERMEABILITY OF GEOLOGIC MATERIALS[1]

Type of material	Approximate range of hydraulic conductivity	Assigned value
Clay, compact till, shale; unfractured metamorphic and igneous rocks.	$<10^{-7}$ cm/sec	0
Silt, loess, silty clays, silty loams, clay loams; less permeable limestone, dolomites, and sandstone; moderately permeable till.	$<10^{-5}$ >10^{-7} cm/sec	1
Fine sand and silty sand; sandy loams; loamy sands; moderately permeable limestone, dolomites, and sandstone (no karst); moderately fractured igneous and metamorphic rocks, some coarse till.	$<10^{-3}$ >10^{-5} cm/sec	2
Gravel, sand; highly fractured igneous and metamorphic rocks; permeable basalt and lavas; karst limestone and dolomite.	>10^{-3} cm/sec	3

[1] Derived from: Davis, S. N., *Porosity and Permeability of Natural Materials in Flow-Through Porous Media*, R.J.M. DeWest ed., Academic Press, New York, 1969; Freeze, R.A. and J.A. Cherry, *Groundwater*, Prentice-Hall, Inc., New York, 1979.

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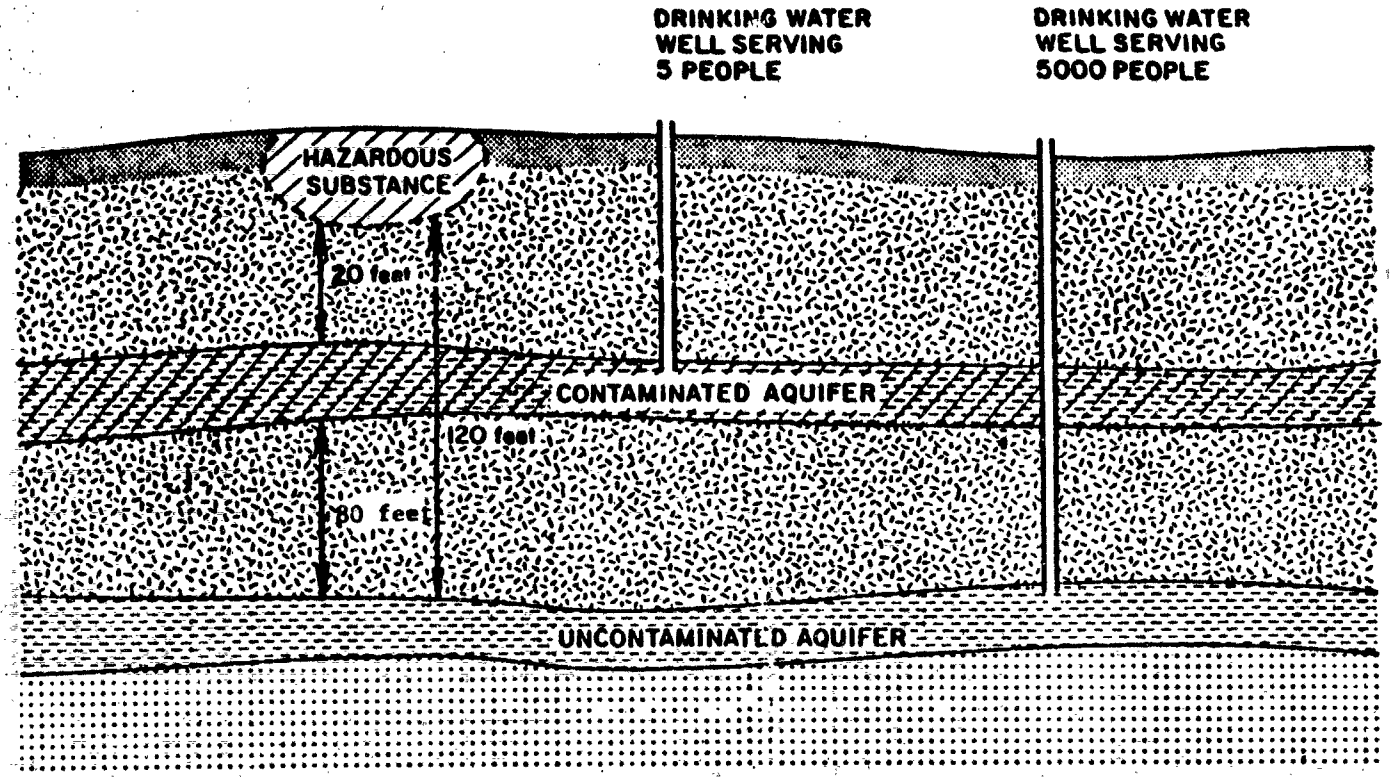
Ground Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 45	1		45	3.1
If observed release is given a score of 45, proceed to line 4. If observed release is given a score of 0, proceed to line 2.					
2 Route Characteristics					3.2
Depth to Aquifer of Concern	0 1 2 3	2		6	
Net Precipitation	0 1 2 3	1		3	
Permeability of the Unsaturated Zone	0 1 2 3	1		3	
Physical State	0 1 2 3	1		3	
Total Route Characteristics Score				15	
3 Containment	0 1 2 3	1		3	3.3
4 Waste Characteristics					3.4
Toxicity/Persistence	0 3 6 9 12 15 18	1		18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				26	
5 Targets					3.5
Ground Water Use	0 1 2 3	3		9	
Distance to Nearest Well/Population Served	0 4 6 8 10 12 16 18 20 24 30 32 35 40	1		40	
Total Targets Score				49	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5				57,330	
7 Divide line 6 by 57,330 and multiply by 100		S_{gw} =			

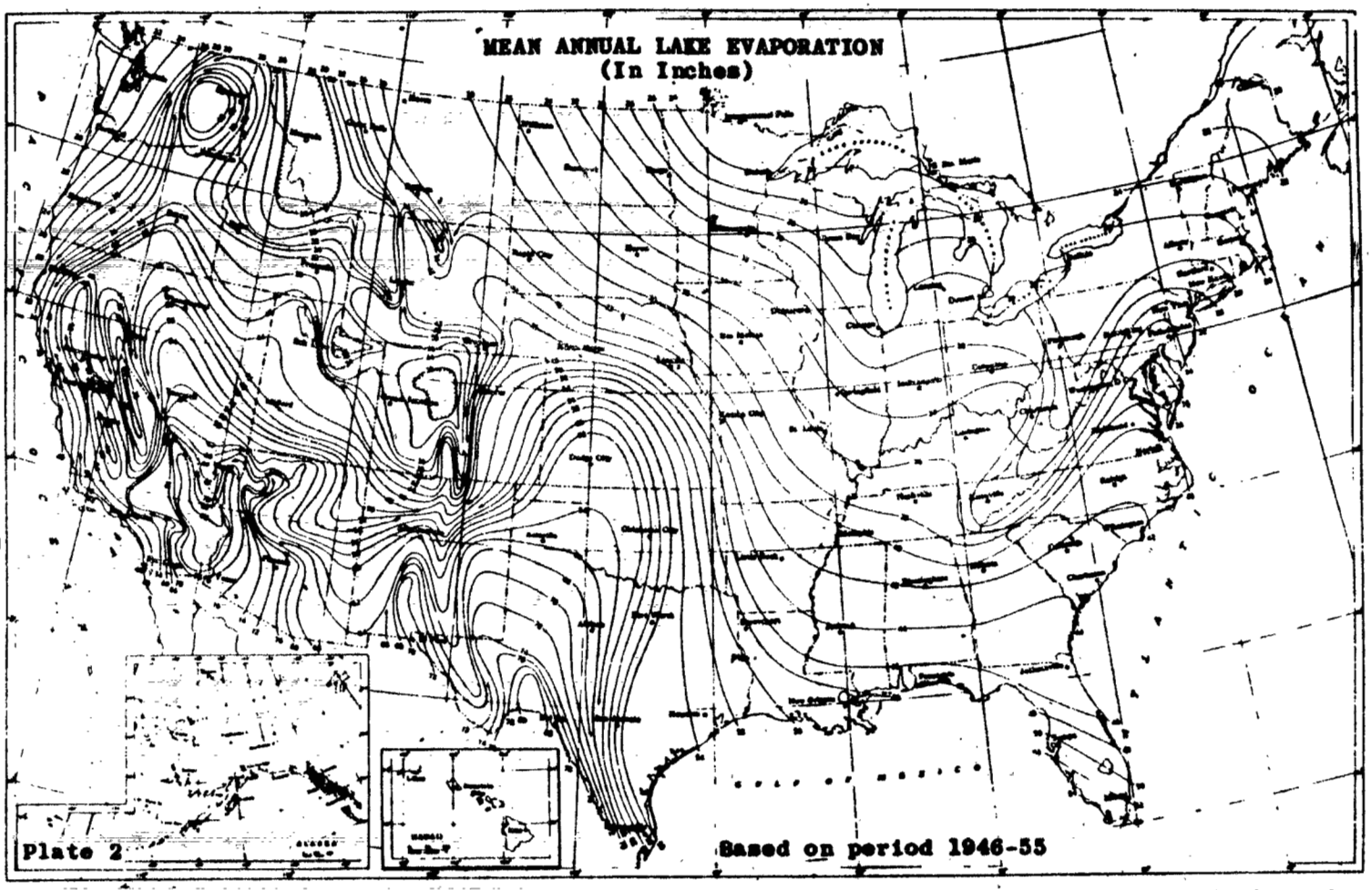
FIGURE 2
GROUND WATER ROUTE WORK SHEET



*Treat target and route characteristics factors consistently. For example, if the upper aquifer is the aquifer of concern, then the "depth to aquifer of concern" is 20 feet and the "population served" is 5 persons. If the lower aquifer is "of concern", the "depth" is 120 feet (assuming no known contamination below the indicated "hazardous substance") and the "population" is 5000 persons. If the upper aquifer is contaminated and the lower aquifer is "of concern", the "depth" would be 80 feet (vertical distance between hazardous substance and aquifer of concern) and the population would be 5000 persons.

FIGURE 3

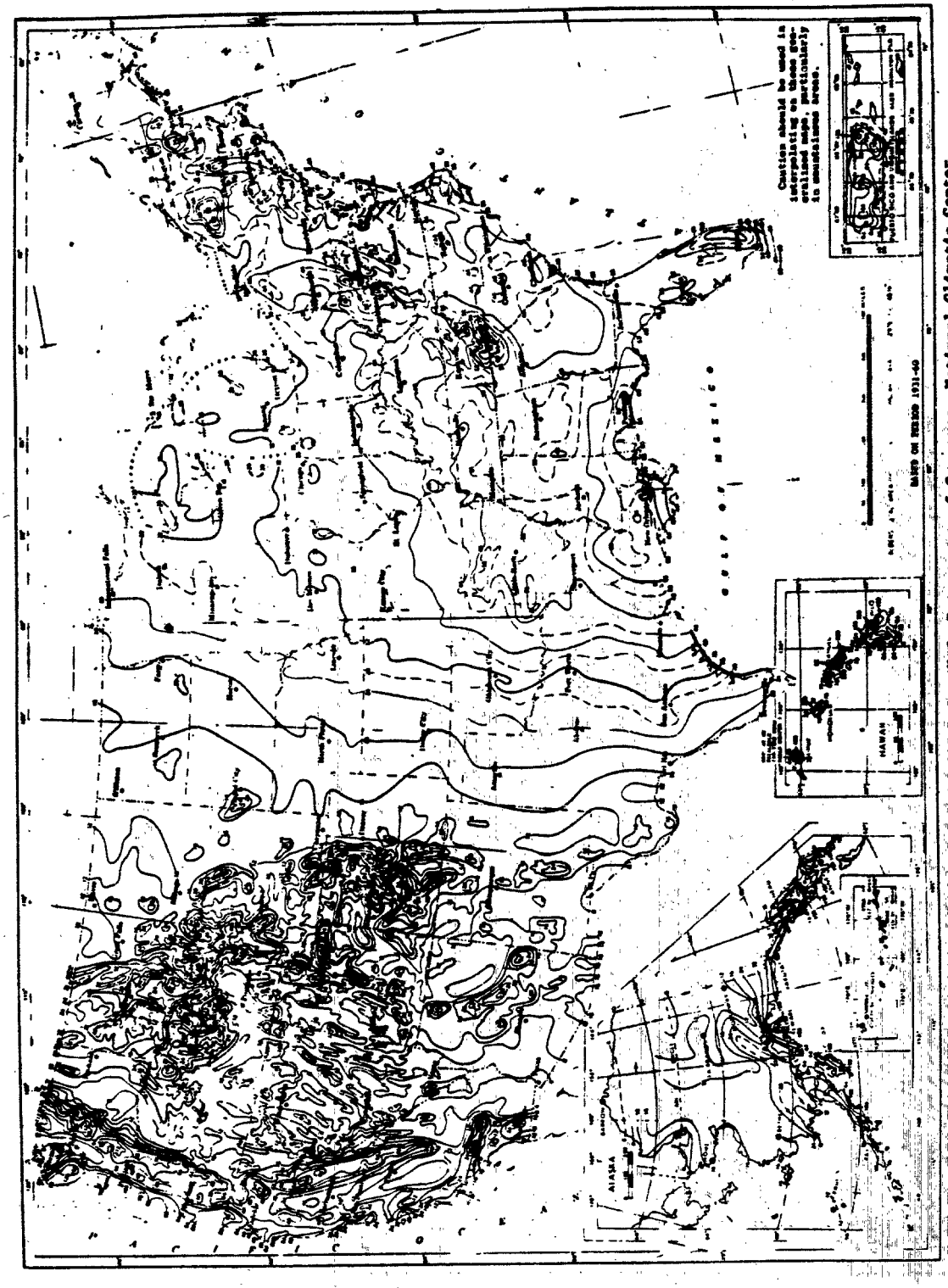
Depth to Aquifer of Concern



Source: Climatic Atlas of the United States, U.S. Department of Commerce, National Climatic Center, Ashville, N.C., 1979.

Figure 4

Mean Annual Lake Evaporation (In Inches)



Source: Climatic Atlas of the United States, U.S. Department of Commerce, National Climatic Center, Asheville, N.C., 1979.

Figure 5

Normal Annual Total Precipitation (inches)

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Physical state refers to the state of the hazardous substances at the time of disposal, except that gases generated by the hazardous substances in a disposal area should be considered in rating this factor. Each of the hazardous substances being evaluated is assigned a value as follows:

Physical state	Assigned value
Solid, consolidated or stabilized	0
Solid, unconsolidated or unstabilized	1
Powder or fine material	2
Liquid, sludge or gas	3

3.3 *Containment*

Containment is a measure of the natural or artificial means that have been used to minimize or prevent a contaminant from entering ground water. Examples include liners, leachate collection systems, and sealed containers. In assigning a value to this rating factor (Table 3), consider all ways in which hazardous substances are stored or disposed at the facility. If the facility involves more than one method of storage or disposal, assign the highest from among all applicable values (e.g., if a landfill has a containment value of 1, and, at the same location, a surface impoundment has a value of 2, assign containment a value of 2).

TABLE 3.—CONTAINMENT VALUE FOR GROUND WATER ROUTE

Assign containment a value of 0 if: (1) all the hazardous substances at the facility are undertain by an essentially non permeable surface (natural or artificial) and adequate leachate collection systems and diversion systems are present; or (2) there is no ground water in the vicinity. The value "0" does not indicate no risk. Rather, it indicates a significantly lower relative risk when compared with more serious sites on a national level. Otherwise, evaluate the containment for each of the different means of storage or disposal at the facility, using the following guidance.

	Assigned value
A. Surface Impoundment	
Sound run-on diversion structure, essentially non permeable liner (natural or artificial) compatible with the waste, and adequate leachate collection system	0
Essentially non permeable compatible liner with no leachate collection system; or inadequate freeboard	1
Potentially unsound run-on diversion structure; or moderately permeable compatible liner	2
Unsound run-on diversion structure; no liner; or incompatible liner	3
B. Containers	
Containers sealed and in sound condition, adequate liner, and adequate leachate collection system	0
Containers sealed and in sound condition, no liner or moderately permeable liner	1
Containers leaking, moderately permeable liner	2
Containers leaking and no liner or incompatible liner	3
C. Piles	
Piles uncovered and waste stabilized; or piles covered, waste unstabilized, and essentially non permeable liner	0
Piles uncovered, waste unstabilized, moderately permeable liner, and leachate collection system	1
Piles uncovered, waste unstabilized, moderately permeable liner, and no leachate collection system	2
Piles uncovered, waste unstabilized, and no liner	3

TABLE 3.—CONTAINMENT VALUE FOR GROUND WATER ROUTE—Continued

Assign containment a value of 0 if: (1) all the hazardous substances at the facility are undertain by an essentially non permeable surface (natural or artificial) and adequate leachate collection systems and diversion systems are present; or (2) there is no ground water in the vicinity. The value "0" does not indicate no risk. Rather, it indicates a significantly lower relative risk when compared with more serious sites on a national level. Otherwise, evaluate the containment for each of the different means of storage or disposal at the facility, using the following guidance.

	Assigned value
D. Landfill	
Essentially non permeable liner, liner compatible with waste, and adequate leachate collection system	0
Essentially non permeable compatible liner, no leachate collection system, and landfill surface precludes ponding	1
Moderately permeable, compatible liner, and landfill surface precludes ponding	2
No liner or incompatible liner; moderately permeable compatible liner; landfill surface encourages ponding; no run-on control	3

3.4 *Waste Characteristics.* In determining a waste characteristics score, evaluate the most hazardous substances at the facility that could migrate (i.e., if scored, containment is not equal to zero) to ground water. Take the substance with the highest score as representative of the potential hazard due to waste characteristics. Note that the substance that may have been observed in the release category can differ from the substance used in rating waste characteristics. Where the total inventory of substances in a facility is known, only those present in amounts greater than the reportable quantity (see CERCLA Section 102 for definition) may be evaluated.

Toxicity and Persistence have been combined in the matrix below because of their important relationship. To determine the overall value for this combined factor, evaluate each factor individually as discussed below. Match the individual values assigned with the values in the matrix for the combined rating factor. Evaluate several of the most hazardous substances at the facility independently and enter only the highest score in the matrix on the work sheet.

Value for toxicity	Value for persistence			
	0	1	2	3
0	0	0	0	0
1	3	6	9	12
2	6	9	12	15
3	9	12	15	18

Persistence of each hazardous substance is evaluated on its biodegradability as follows:

Substance	Assigned value
Easily biodegradable compounds	0
Straight chain hydrocarbons	1
Substituted and other ring compounds	2
Metals, polycyclic compounds and halogenated hydrocarbons	3

More specific information is given in Tables 4 and 5.

Toxicity of each hazardous substance being evaluated is given a value using the rating scheme of Sax (Table 6) or the National Fire Protection Association (NFPA) (Table 7) and the following guidance:

Toxicity	Assigned value
Sax level 0 or NFPA level 0	0
Sax level 1 or NFPA level 1	1
Sax level 2 or NFPA level 2	2
Sax level 3 or NFPA level 3 or 4	3

Table 4 presents values for some common compounds.

Hazardous waste quantity includes all hazardous substances at a facility (as received) except that with a containment value of 0. Do not include amounts of contaminated soil or water; in such cases, the amount of contaminating hazardous substance may be estimated.

On occasion, it may be necessary to convert data to a common unit to combine them. In such cases, 1 ton=1 cubic yard=4 drums and for the purposes of converting bulk storage, 1 drum=50 gallons. Assign a value as follows:

Tons in cubic yards	Number of drums	Assigned value
0	0	0
1–10	1–40	1
11–62	41–250	2
63–125	251–500	3
126–250	501–1,000	4
251–625	1,001–2,500	5
626–1,250	2,501–5,000	6
1,251–2,500	5,001–10,000	7
> 2,500	> 10,000	8

TABLE 4.—WASTE CHARACTERISTICS VALUES FOR SOME COMMON CHEMICALS

Chemical/Compound	Toxicity[1]	Persistence[2]	Ignitability[3]	Reactivity[3]
Acetaldehyde	3	0	3	2
Acetic Acid	3	0	2	1
Acetone	2	0	3	0
Aldrin	3	3	1	0
Ammonia, Anhydrous	3	0	1	0
Aniline	3	1	2	0
Benzene	3	1	3	0
Carbon Tetrachloride	3	3	0	0
Chlordane	3	3	*0	*0
Chlorobenzene	2	2	3	0
Chloroform	3	3	0	0
Cresol-O	3	1	2	0
Cresol-M&P	3	1	1	0
Cyclohexane	2	2	3	0
Endrin	3	3	1	0
Ethyl Benzene	2	1	3	0
Formaldehyde	3	0	2	0
Formic Acid	3	0	2	0
Hydrochloric Acid	3	0	0	0
Isopropyl Ether	3	1	3	1
Lindane	3	3	1	0
Methane	1	1	3	0
Methyl Ethyl Ketone	2	0	3	0
Methyl Parathion in Xylene Solution	3	Δ0	3	2
Naphthalene	2	1	2	0
Nitric Acid	3	0	0	0
Parathion	3	Δ0	1	2
PCB	3	3	Δ0	Δ0
Petroleum, Kerosene (Fuel Oil No. 1)	3	1	2	0
Phenol	3	1	2	0
Sulfuric Acid	3	0	0	2
Toluene	2	1	3	0

TABLE 4.—WASTE CHARACTERISTICS VALUES FOR SOME COMMON CHEMICALS—Continued

Chemical/Compound	Toxicity[1]	Persistence[2]	Ignitability[3]	Reactivity[4]
Trichlorobenzene	2	3	1	0
α-Trichloroethane	2	2	1	0
Xylene	2	1	3	0

[1] Sax, N. I., *Dangerous Properties of Industrial Materials*, Van Nostrand Rheinhold Co., New York, 4th ed., 1975. The highest rating listed under each chemical is used.
[2] JRB Associates, Inc., *Methodology for Rating the Hazard Potential of Waste Disposal Sites*, May 5, 1980.
[3] National Fire Protection Association, National Fire Codes, Vol 13, No. 49, 1977.
[4] Professional judgment based on information contained in the U.S. Coast Guard CHRIS Hazardous Chemical Data, 1978.
Δ Professional judgment based on existing literature.

TABLE 5.—PERSISTENCE (BIODEGRADABILITY) OF SOME ORGANIC COMPOUNDS*

Value=3 Highly Persistent Compounds

aldrin	heptachlor
benzopyrene	heptachlor epoxide
benzothiazole	1,2,3,4,5,7,7-heptachlororiorbornene
benzothiophene	hexachlorobenzene
benzyl butyl phthalate	hexachloro-1,3-butadiene
bromochlorobenzene	hexachlorocyclohexane
bromoform butanal	hexachloroethane
bromophenyl phyntyl ether	methyl benzothiazole
chlordane	pentachlorobiphenyl
chlorohydroxy benzophenone	pentachlorophenol
bis-chloroisopropyl ether	1,1,3,3-tetrachloroacetone
m-chloronitrobenzene	tetrachlorophenyl
DDE	thiomethylbenzothiazole
DDT	trichlorobenzene
dibromobenzene	trichlorobiphenyl
dibutyl phthalate	trichlorofluromethane
1,4-dichlorobenzene	2,4,6-trichlorophenol
dichlorodifluoroethane	triphenyl phosphate
dieldrin	bromodichloromethane
diethyl phthalate	bromoform
di(2-ethylhexyl)phthalate	carbon tetrachloride
dihexyl phthalate	chloroform
di-isobutyl phthalate	chloromochloromethane
dimethyl phthalate	dibromodichloroethane
4,6-dinitro-2-aminophenol	tetrachloroethane
dipropyl phythalate	1,1,2-trichloroethene
endrin	

Value=2 Persistent Compounds

acenaphthylene	cis-2-ethyl-4-methyl-1,3-dioxolane
atrazine	trans-2-ethyl-4-methyl-1,3-dioxolane
(diethyl) atrazine	guaiacol
barbital	2-hydroxyadiponitrile
borneol	isophorone
bromobenzene	indene
camphor	isoborneol
chlorobenzene	isopropphenyl-r-isopropyl benzene
1,2-bis-chloroethoxy ethane	2-methoxy biphenyl
b-chloroethyl methyl ether	methyl biphenyl
chloromethyl ether	methyl chloride
chloromethyl ethyl ether	methylindene
3-chloropyridine	methylene chloride
di-t-butyl-p-benzoquinone	nitroanisole
dichloroethyl ether	nitrobenzene
dihyrocarvone	1,1,2-trichloroethylene
dimethyl sulfoxide	trimethyl-trioxo-hexahydro-triazine isomer
2,6-dinitrotoluene	

Value=1 Somewhat Persistent Compounds

acetylene dichloride	1,2-dimethoxy benzene
behenic acid, methyl ester	1,3-dimethyl naphthalene
benzene	1,4-dimethyl phenol
benzene sulfonic acid	dioctyl adipate
butyl benzene	n-decane
butyl bromide	ethyl benzene
e-caprolactam	2-ethyl-n-hexane
carbon disulfide	o-ethyltoluene
o-cresol	isodecane
decane	isopropyl benzene
1,2-dichloroethane	

TABLE 5.—PERSISTENCE (BIODEGRADABILITY) OF SOME ORGANIC COMPOUNDS*—Continued

limonene	octane
methyl ester of lignoceric acid	octyl chloride
methane	pentane
2-methyl-5-ethyl-pyridine	phenyl benzoate
methyl naphthalene	phthalic anhydride
methyl palmitate	propylbenzene
methyl phenyl carbinol	1-terpineol
methyl stearate	toluene
naphthalene	vinyl benzene
nonane	xylene

Value=0 Nonpersistent Compounds

acetaldehyde	methyl benzoate
acetic acid	3-methyl butanol
acetone	methyl ethyl ketone
acetophenone	2-methylpropanol
benzoic acid	octadecane
di-isobutyl carbinol	pentadecane
docosane	pentanol
eicosane	propanol
ethanol	propylamine
ethylamine	tetracosane
hexadecane	n-tridecane
methanol	n-undecane

* JRB Associates, Inc., *Methodology for Rating the Hazard Potential for Waste Disposal Sites*, May 5, 1980.

TABLE 6.—SAX TOXICITY RATINGS

0=No Toxicity* (None)**

This designation is given to materials which fall into one of the following categories:
(a) Materials which cause no harm under any conditions of normal use.
(b) Materials which produce toxic effects on humans only under the most unusual conditions or by overwhelming dosage.

1=Slight Toxicity* (Low)**

(a) *Acute local.* Materials which on single exposures lasting seconds, minutes, or hours cause only slight effects on the skin or mucous membranes regardless of the extent of the exposure.
(b) *Acute systemic.* Materials which can be absorbed into the body by inhalation, ingestion, or through the skin and which produce only slight effects following single exposures lasting seconds, minutes, or hours, or following ingestion of a single dose regardless of the quantity absorbed or the extent of exposure.
(c) *Chronic local.* Materials which on continuous or repeated exposures extending over periods of days, months, or years cause only slight and usually reversible harm to the skin or mucous membranes. The extent of exposure may be great or small.
(d) *Chronic systemic.* Materials which can be absorbed into the body by inhalation, ingestion, or through the skin and which produce only slightly usually reversible effects extending over days, months, or years. The extent of the exposure may be great or small.
In general, those substances classified as having "slight toxicity" produce changes in the human body which are readily reversible and which will disappear following termination of exposure, either with or without medical treatment.

2=Moderate Toxicity* (Med)**

(a) *Acute local.* Materials which on single exposure lasting seconds, minutes, or hours cause moderate effects on the skin or mucous membranes. These effects may be the result of intense exposure for a matter of seconds or moderate exposure for a matter of hours.
(b) *Acute systemic.* Materials which can be absorbed into the body by inhalation, ingestion, or through the skin and produce moderate effects following single exposures lasting seconds, minutes, or hours, or following ingestion of a single dose.

TABLE 6.—SAX TOXICITY RATINGS—Continued

(c) *Chronic local.* Materials which on continuous or repeated exposures extending over periods of days, months, or years cause moderate harm to the skin or mucous membranes.
(d) *Chronic systemic.* Materials which can be absorbed into the body by inhalation, ingestion, or through the skin and which produce moderate effects following continuous or repeated exposures extending over periods of days, months, or years.
These substances classified as having "moderate toxicity" may produce irreversible as well as reversible changes in the human body. These changes are not of such severity as to threaten life or to produce serious physical impairment.

3=Severe Toxicity* (High)**

(a) *Acute local.* Materials which on single exposure lasting seconds or minutes cause injury to skin or mucous membranes of sufficient severity to threaten life or to cause permanent physical impairment or disfigurement.
(b) *Acute systemic.* Materials which can be absorbed into the body by inhalation, ingestion, or through the skin and which can cause injury of sufficient severity to threaten life following a single exposure lasting seconds, minutes, or hours, or following ingestion of a single dose.
(c) *Chronic local.* Materials which on continuous or repeated exposures extending over periods of days, months, or years can cause injury to skin or mucous membranes of sufficient severity to threaten life or cause permanent impairment, which disfigurement, or irreversible change.
(d) *Chronic systemic.* Materials which can be absorbed into the body by inhalation, ingestion or through the skin and which can cause death or serious physical impairment following continuous or repeated exposures to small amounts extending over periods of days, months, or years.

*Sax, N. I., Dangerous Properties of Industrial Materials, Van Nostrand Rheinhold Co., New York, New York, 4th edition, 1975.
**Sax, N. I., Dangerous Properties of Industrial Materials, Van Nostrand Rheinhold Co., New York, New York, 5th edition, 1979.

TABLE 7.—NFPA TOXICITY RATINGS*

0 Materials which on exposure under fire conditions would offer no health hazard beyond that of ordinary combustible material.
1 Materials only slightly hazardous to health. It may be desirable to wear self-contained breathing apparatus.
2 Materials hazardous to health, but areas may be entered freely with self-contained breathing apparatus.
3 Materials extremely hazardous to health, but areas may be entered with extreme care. Full protective clothing, including self-contained breathing apparatus, rubber gloves, boots and bands around legs, arms and waist should be provided. No skin surface should be exposed.
4 A few whiffs of the gas or vapor could cause death, or the gas, vapor, or liquid could be fatal on penetrating the fire fighters' normal full protective clothing which is designed for resistance to heat. For most chemicals having a Health 4 rating, the normal full protective clothing available to the average fire department will not provide adequate protection against skin contact with these materials. Only special protective clothing designed to protect against the specific hazard should be worn.

*National Fire Protection Association. *National Fire Codes*, Vol. 13, No. 49, 1977.

3.5 *Targets. Ground water use* indicates the nature of the use made of ground water drawn from the aquifer of concern within 3 miles of the hazardous substance, including the geographical extent of the measurable concentration in the aquifer. Assign a value using the following guidance:

Ground water use	Assigned value
Unusable (e.g., extremely saline aquifer, extremely low yield, etc.)	0
Commercial, industrial or irrigation and another water source presently available; not used, but usable	1
Drinking water with municipal water from alternate undiscovered sources presently available (i.e., minimal hookup requirements); or commercial, industrial or irrigation with no other water source presently available	2
Drinking water; no municipal water from alternate undiscovered sources presently available	3

Distance to nearest well and population served have been combined in the matrix below to better reflect the important relationship between the distance of a population from hazardous substances and the size of the population served by ground water that might be contaminated by those substances. To determine the overall value for this combined factor, score each individually as discussed below. Match the individual values assigned with the values in the matrix for the total score.

Value for population served	Value for distance to nearest well				
	0	1	2	3	4
0	0	0	0	0	0
1	0	4	6	8	10
2	0	6	12	16	20
3	0	12	18	24	30
4	0	16	24	32	36
5	0	20	30	35	40

Distance to nearest well is measured from the hazardous substance (not the facility boundary) to the nearest well that draws water from the aquifer of concern. If the actual distance to the nearest well is unknown, use the distance between the hazardous substance and the nearest occupied building not served by a public water supply (e.g., a farmhouse). If a discontinuity in the aquifer occurs between the hazardous substance and all wells, give this factor a score of 0, except where it can be shown that the contaminant is likely to migrate beyond the discontinuity. Figure 6 illustrates how the distance should be measured. Assign a value using the following guidance:

Distance	Assigned value
>3 miles	0
2 to 3 miles	1
1 to 2 miles	2
2001 feet to 1 mile	3
<2000 feet	4

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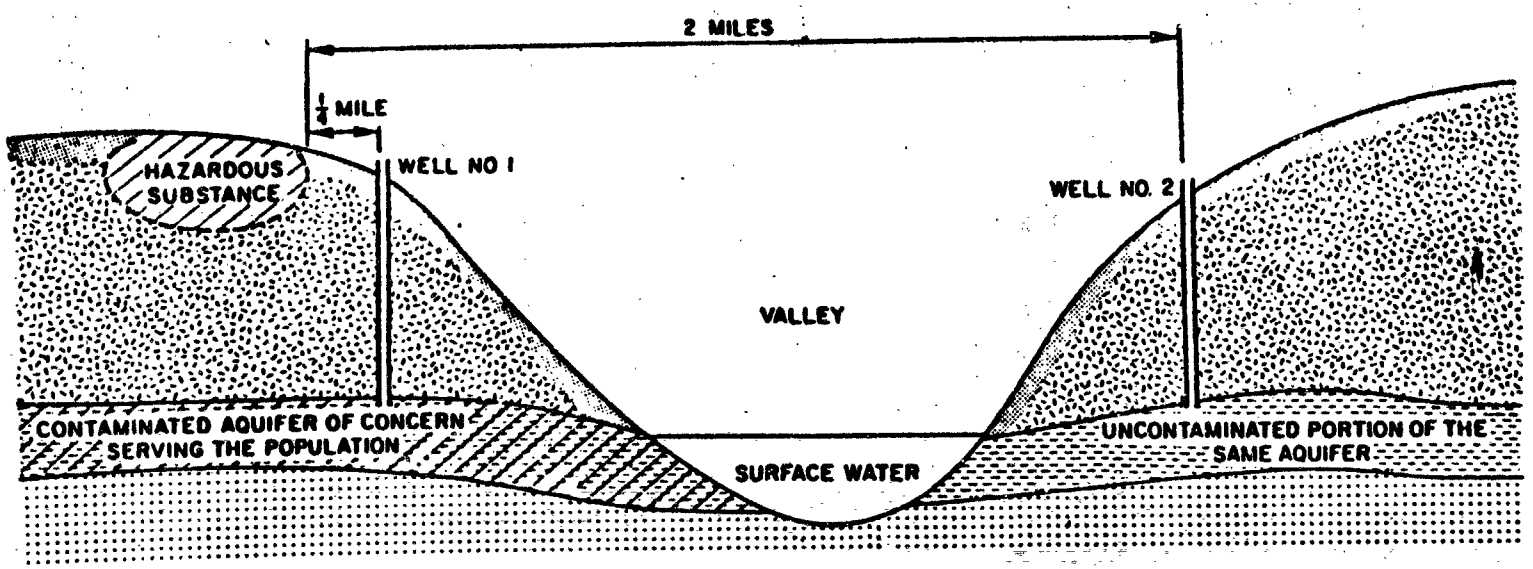

In the situation depicted above, the distance between the hazardous substance and the nearest well (No. 1) is ¼ mile. If well No. 1 did not exist, the distance to well No. 2 would be immaterial since there is a discontinuity in the aquifer (surface water) between it and the hazardous substance. Under such circumstances, the factor score would be "0". However, if it could be demonstrated that the contaminent had bridged the discontinuity, then the distance to the nearest well would be 2 miles (assuming well No. 1 does not exist).

FIGURE 6

Distance to Nearest Well

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Population served by ground water is an indicator of the population at risk, which includes residents as well as others who would regularly use the water such as workers in factories or offices and students. Include employees in restaurants, motels, or campgrounds but exclude customers and travelers passing through the area in autos, buses, or trains. If aerial photography is used, and residents are known to use ground water, assume each dwelling unit has 3.8 residents. Where ground water is used for irrigation, convert to population by assuming 1.5 persons per acre of irrigated land. The well or wells of concern must be within three miles of the hazardous substances, including the area of known aquifer contamination, but the "population served" need not be. Likewise, people within three miles who do not use water from the aquifer of concern are not to be counted. Assign a value as follows:

Population	Assigned value
0	0
1 to 100	1
101 to 1,000	2
1,001 to 3,000	3
3,001 to 10,000	4
>10,000	5

4.0 Surface Water Route

4.1 *Observed Release.* Direct evidence of release to surface water must be quantitative evidence that the facility is releasing contaminants into surface water. Quantitative evidence could be the measurement of levels of contaminants from a facility in surface water, either at the facility or downhill from it, that represents a significant (in terms of demonstrating that a release has occurred, not in terms of potential effects) increase over background levels. If direct evidence of release has been obtained (regardless of frequency), enter a value of 45 on line 1 of the work sheet (Figure 7) and omit the evaluation of the route characteristics and containment factors. If direct evidence of release is lacking, enter a value of 0 on line 1 and continue with the scoring procedure.

4.2. *Route Characteristics. Facility slope and intervening terrain* are indicators of the potential for contaminated runoff or spills at a facility to be transported to surface water. The facility slope is an indicator of the potential for runoff or spills to leave the facility. Intervening terrain refers to the average slope of the shortest path which would be followed by runoff between the facility boundary and the nearest downhill surface water. This rating factor can be assessed using topographic maps. Table 8 shows values assigned to various facility conditions.

One-year 24-hour rainfall (obtained from Figure 8) indicates the potential for area storms to cause surface water contamination as a result of runoff, erosion, or flow over dikes. Assign a value as follows:

Amount of rainfall (inches)	Assigned value
<1.0	0
1.0 to 2.0	1
2.1 to 3.0	2
>3.0	3

TABLE 8.—VALUES FOR FACILITY SLOPE AND INTERVENING TERRAIN

Facility slope	Intervening terrain				
	Terrain average slope				Site in surface water
	<3 pct[1]	3 to 5 pct	5 to 8 pct	> 8 pct	
Facility is closed basin	0	0	0	0	3
Facility has average slope (<3 pct)	0	1	1	2	3
Average slope (3 to 5 pct)	0	1	2	2	3
Average slope (5 to 8 pct)	0	2	2	3	3
Average slope (> 8 pct)	0	2	3	3	3

[1] Terrain average slope <3 pct, or site separated from water body by areas of higher elevation.

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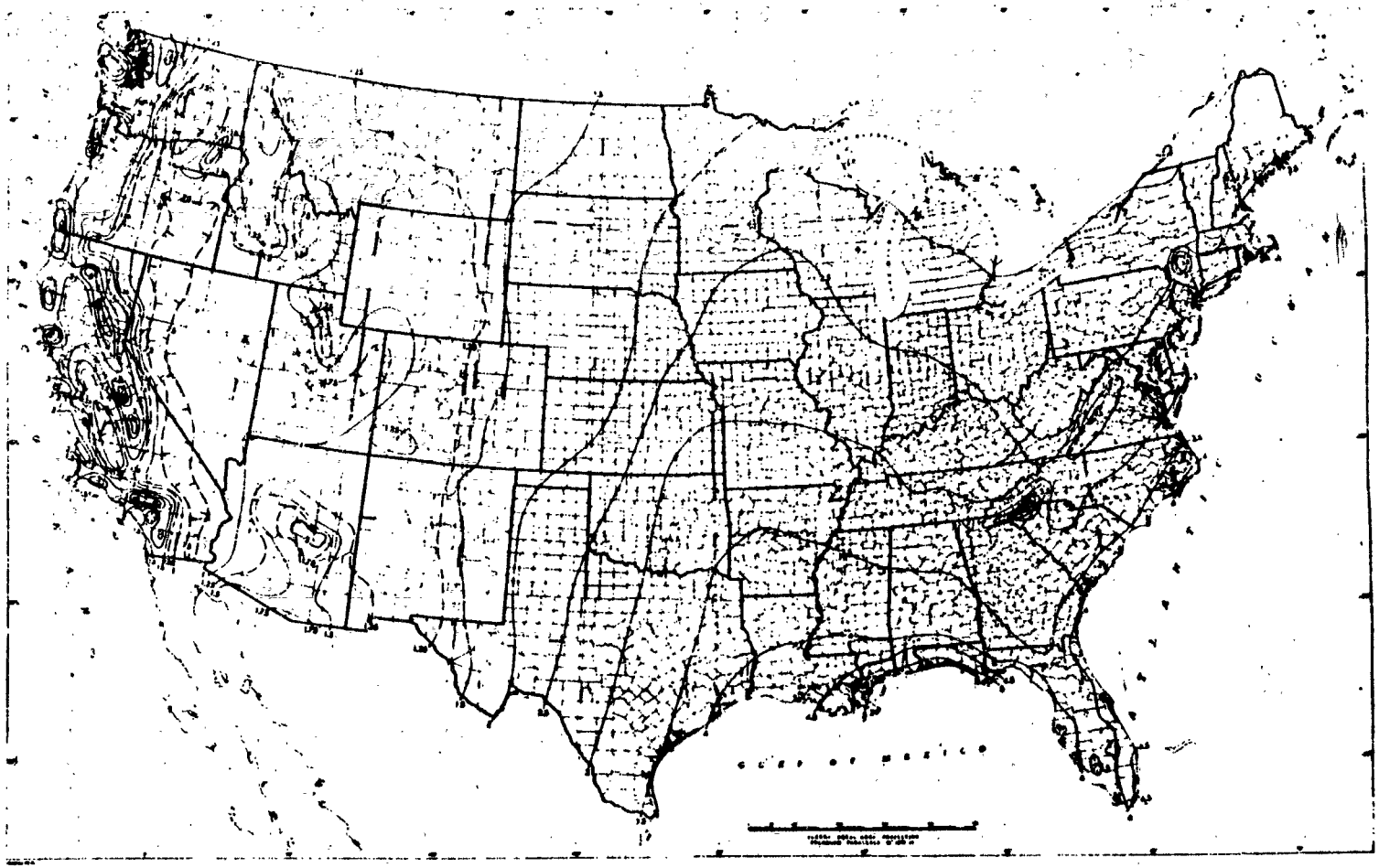
Surface Water Route Work Sheet						
Rating Factor	Assigned Value (Circle One)		Multiplier	Score	Max. Score	Ref. (Section)
1 Observed Release	0	45	1		45	4.1
If observed release is given a value of 45, proceed to line 4. If observed release is given a value of 0, proceed to line 2.						
2 Route Characteristics						4.2
Facility Slope and Intervening Terrain	0 1 2 3		1		3	
1-yr. 24-hr. Rainfall	0 1 2 3		1		3	
Distance to Nearest Surface Water	0 1 2 3		2		6	
Physical State	0 1 2 3		1		3	
Total Route Characteristics Score					15	
3 Containment	0 1 2 3		1		3	4.3
4 Waste Characteristics						4.4
Toxicity/Persistence	0 3 6 9 12 15 18		1		18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8		1		8	
Total Waste Characteristics Score					26	
5 Targets						4.5
Surface Water Use	0 1 2 3		3		9	
Distance to a Sensitive Environment	0 1 2 3		2		6	
Population Served/Distance to Water Intake Downstream	0 4 6 8 10 12 16 18 20 24 30 32 35 40		1		40	
Total Targets Score					55	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5					64,350	
7 Divide line 6 by 64,350 and multiply by 100			S_{SW} =			

FIGURE 7
SURFACE WATER ROUTE WORK SHEET



Source: Rainfall Frequency Atlas of the United States, Technical Paper No. 40, U.S. Department of Commerce, U.S. Government Printing Office, Washington, D.C., 1963.

Figure 8

1-Year 24-Hour Rainfall (Inches)

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Distance to the nearest surface water is the shortest distance from the hazardous substance, (not the facility or property boundary) to the nearest downhill body of surface water (e.g., lake or stream) that is on the course that runoff can be expected to follow and that at least occasionally contains water. Do not include man-made ditches which do not connect with other surface water bodies. In areas having less than 20 inches of normal annual precipitation (see Figure 5), consider intermittent streams. This factor indicates the potential for pollutants flowing overland and into surface water bodies. Assign a value as follows:

Distance	Assigned value
>2 miles	0
1 to 2 miles	1
1000 feet to 1 mile	2
< 1000 feet	3

Physical state is assigned a value using the procedures in Section 3.2.

4.3 *Containment. Containment* is a measure of the means that have been taken to minimize the likelihood of a contaminant entering surface water either at the facility or beyond the facility boundary. Examples of containment are diversion structures and the use of sealed containers. If more than one type of containment is used at a facility, evaluate each separately (Table 9) and assign the highest score.

TABLE 9.—CONTAINMENT VALUES FOR SURFACE WATER ROUTE

Assign containment a value of 0 if: (1) all the waste at the site is surrounded by diversion structures that are in sound condition and adequate to contain all runoff, spills, or leaks from the waste; or (2) intervening terrain precludes runoff from entering surface water. Otherwise, evaluate the containment for each of the different means of storage or disposal at the site and assign a value as follows:

	Assigned value
A. Surface Impoundment	
Sound diking or diversion structure, adequate freeboard, and no erosion evident	0
Sound diking or diversion structure, but inadequate freeboard	1
Diking not leaking, but potentially unsound	2
Diking unsound, leaking, or in danger of collapse	3
B. Containers	
Containers sealed, in sound condition, and surrounded by sound diversion or containment system	0
Containers sealed and in sound condition, but not surrounded by sound diversion or containment system	1
Containers leaking and diversion or containment structures potentially unsound	2
Containers leaking, and no diversion or containment structures or diversion structures leaking or in danger of collapse	3
C. Waste Piles	
Piles are covered and surrounded by sound diversion or containment system	0
Piles covered, wastes unconsolidated, diversion or containment system not adequate	1
Piles not covered, wastes unconsolidated, and diversion or containment system potentially unsound	2
Piles not covered, wastes unconsolidated, and no diversion or containment or diversion system leaking or in danger or collapse	3

TABLE 9.—CONTAINMENT VALUES FOR SURFACE WATER ROUTE—Continued

Assign containment a value of 0 if: (1) all the waste at the site is surrounded by diversion structures that are in sound condition and adequate to contain all runoff, spills, or leaks from the waste; or (2) intervening terrain precludes runoff from entering surface water. Otherwise, evaluate the containment for each of the different means of storage or disposal at the site and assign a value as follows:

	Assigned value
D. Landfill	
Landfill slope precludes runoff, landfill surrounded by sound diversion system, or landfill has adequate cover material	0
Landfill not adequately covered and diversion system sound	1
Landfill not covered and diversion system potentially unsound	2
Landfill not covered and no diversion system present, or diversion system unsound	3

4.4 *Waste Characteristics.* Evaluate waste characteristics for the surface water route with the procedures described in Section 3.4 for the ground water route.

4.5 *Targets. Surface water use* brings into the rating process the use being made of surface water downstream from the facility. The use or uses of interest are those associated with water taken from surface waters within a distance of three miles from the location of the hazardous substance. Assign a value as follows:

Surface water use (fresh or salt water)	Assigned value
Not currently used	0
Commercial or industrial	1
Irrigation, economically important resources (e.g., shellfish), commercial food preparation, or recreation (e.g., fishing, boating, swimming)	2
Drinking Water	3

Distance to a sensitive environment refers to the distance from the hazardous substance (not the facility boundary) to an area containing an important biological resource or to a fragile natural setting that could suffer an especially severe impact from pollution. Table 10 provides guidance on assigning a value to this rating factor.

TABLE 10—VALUES FOR SENSITIVE ENVIRONMENT (SURFACE WATER)

Assigned value=	0	1	2	3
Distance to Wetlands[1] (5 acre minimum)				
Coastal	>2 miles	1 to 2 miles	½ to 1 mile	< ½ mile.
Fresh Water	>1 mile	¼ to 1 mile	100 feet to ¼ mile	<100 feet.
Distance to Critical Habitat (of endangered species)[2]	>1 mile	¼ to 1 mile	¼ to ½ mile	< ¼ mile.

[1] Wetland is defined by EPA in the Code of Federal Regulations 40 CFR Part 230, Appendix A, 1980.
[2] Endangered species are designated by the U.S. Fish and Wildlife Service.

Population served by surface water with water intake within 3 miles downstream from facility (or 1 mile in static surface water such as a lake) is a rough indicator of the potential hazard exposure of the nearby population served by potentially contaminated surface water. Measure the distance from the probable point of entry to surface water following the surface water (stream miles). The population includes residents as well as others who would regularly use the water such as workers in factories or offices and students. Include employees in restaurants, motels, or campgrounds but exclude customers and travelers passing through the area in autos, buses and trains. The distance is measured from the hazardous substance, including observations in stream or sediment samples, regardless of facility boundaries. Where only residential houses can be counted (e.g., from an aerial photograph), and residents are known to be using surface water, assume 3.8 individuals per dwelling unit. Where surface water is used for irrigation, convert to population by assuming 1.5 persons per acre of land irrigated. Assign a value as follows:

Population	Distance to surface water				
	>3 miles	2–3 miles	1–2 miles	200'–1 mile	0–2,000 feet
0	0	0	0	0	0
1–100	0	4	6	8	10
101–1,000	0	6	12	16	20
1,001–3,000	0	12	18	24	30
3,001–10,000	0	16	24	32	35
>10,000	0	20	30	36	40

5.0 Air Route

5.1 *Observed Release.* The only acceptable evidence of release for the air route is data that show levels of a contaminant at or in the vicinity of the facility that significantly exceed background levels, regardless of the frequency of occurrence. If such evidence exists, enter a value of 45 on line 1 of the work sheet (Figure 9); if not, assign line 1 a 0 value and then $S_a = 0$. Record the date, location, and the sampling protocol for monitoring data on the work sheet. Data based on transitory conditions due to facility disturbance by investigative personnel are not acceptable.

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Air Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 45	1		45	5.1
Date and Location:					
Sampling Protocol:					
If line 1 is 0, the S_a = 0. Enter on line 5 If line 1 is 45, then proceed to line 2					
2 Waste Characteristics					5.2
Reactivity and Incompatibility	0 1 2 3	1		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score			20	
3 Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
	Total Targets Score			39	
4 Multiply 1 x 2 x 3				35,100	
5 Divide line 4 by 35,100 and multiply by 100		S_a =			

FIGURE 9
AIR ROUTE WORK SHEET

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5.2 *Waste Characteristics.* The hazardous substance that was observed for scoring the release category may be different from the substance used to score waste characteristics.

Reactivity and incompatibility, measures of the potential for sudden releases of concentrated air pollutants, are evaluated independently, and the highest value for either is recorded on the work sheet.

Reactivity provides a measure of the fire/explosion threat at a facility. Assign a value based on the reactivity classification used by NFPA (see Table 11). Reactivity ratings for a number of common compounds are given in Table 4.

TABLE 11.—NFPA REACTIVITY RATINGS

NFPA level	Assigned value
0 Materials which are normally stable even under fire exposure conditions and which are not reactive with water	0
1 Materials which in themselves are normally stable but which may become unstable at elevated temperatures and pressures or which may react with water with some release of energy but not violently	1
2 Materials which in themselves are normally unstable and readily undergo violent chemical change but do not detonate. Includes materials which can undergo chemical change with rapid release of energy at normal temperatures and pressures or which can undergo violent chemical change at elevated temperatures and pressures. Also includes those materials which may react violently with water or which may form potentially explosive mixtures with water	2
3 Materials which in themselves are capable of detonation or of explosive decomposition or of explosive reaction but which requires a strong initiating source or which must be heated under confinement before initiation. Includes materials which are sensitive to thermal or mechanical shock at elevated temperatures and pressures or which react explosively with water without requiring heat or confinement	3
4 Materials which in themselves are readily capable of detonation or of explosive decomposition or explosive reaction at normal temperatures and pressures. Includes materials which are sensitive to mechanical or localized thermal shock	3

TABLE 12.—INCOMPATIBLE MATERIALS

In the lists below, the mixing of a Group A material with a Group B material may have the potential consequence as noted.

Group 1–A	Group 1–B
Acetylene sludge	Acid sludge.
Alkaline caustic liquids	Acid and water.
Alkaline cleaner	Battery acid.
Alkaline corrosive liquids	Chemical cleaners.
Alkaline corrosive battery fluid.	Electrolyte acid.
Caustic wastewater	Etching acid liquid or solvent.
Lime sludge and other corrosive alkalies.	Pickling liquor and other corrosive acids.
Lime wastewater	Spent acid.
Lime and water	Spent mixed acid.
Spent caustic	Spent sulfuric acid.

Potential consequences: Heat generation; violent reaction.

Group 2–A	Group 2–B
Aluminum	Any waste in Group 1–A or 1–B.
Beryllium	
Calcium	
Lithium	
Potassium	

TABLE 12.—INCOMPATIBLE MATERIALS—Continued

In the lists below, the mixing of a Group A material with a Group B material may have the potential consequence as noted.

Group 2–A	Group 2–B
Sodium	
Zinc powder	
Other reactive metals and metal hydrides.	

Potential consequences: Fire or explosion; generation of flammable hydrogen gas.

Group 3–A	Group 3–B
Alcohols	Any concentrated waste in Groups 1–A or 1–B.
Water	Calcium.
	Lithium.
	Metal hydrides.
	Potassium.
	SO_3Cl_2, $SOCl_2$, PCl_3, CH_3SiCl_3.
	Other water-reactive waste.

Potential consequences: Fire, explosion, or heat generation; generation of flammable or toxic gases.

Group 4–A	Group 4–B
Alcohols	Concentrated Group 1–A or 1–B wastes.
Aldehydes	Group 2–A wastes.
Halogenated hydrocarbons	
Nitrated hydrocarbons	
Unsaturated hydrocarbons	
Other reactive organic compounds and solvents.	

Potential consequences: Fire, explosion, or violent reaction.

Group 5–A	Group 5–B
Spent cyanide and sulfide solutions.	Group 1–B wastes.

Potential consequences: Generation of toxic hydrogen cyanide or hydrogen sulfide gas.

Group 6–A	Group 6–B
Chlorates	Acetic acid and other organic acids.
Chlorine	Concentrated mineral acids.
Chlorites	Group 2–A wastes.
Chromic acid	Group 4–A wastes.
Hypochlorites	Other flammable and combustible wastes.
Nitrates	
Nitric acid, fuming	
Perchlorates	
Permanganates	
Peroxides	
Other strong oxidizers	

Potential consequences: Fire, explosion, or violent reaction.

Source: Hazardous Waste Management Law, Regulations, and Guidelines for the Handling of Hazardous Waste. California Department of Health, Sacramento, California, February 1975.

Incompatibility provides a measure of the increased hazard when hazardous substances are mixed under uncontrolled conditions, leading to production of heat, pressure, fire, explosion, violent reaction, toxic dusts, mists, fumes or gases, or flammable fumes or gases. Table 12 provides examples of incompatible combinations of materials.

Land use indicates the nature and level of human activity in the vicinity of a facility. Assign highest applicable value from Table 13.

6.0 Computing the Migration Hazard Mode Score, S_M

To compute S_M, complete the work sheet (Figure 10) using the values of S_{gw}, S_{sw} and S_a obtained from the previous sections.

7.0 Fire and Explosion

Compute a score for the fire and explosion hazard mode, S_{FE}, when either a state or local fire marshal has certified that the facility presents a significant fire or explosion threat to the public or to sensitive environments or there is a demonstrated fire and explosion threat based on field observations (e.g., combustible gas indicator readings). Document the threat.

7.1 *Containment. Containment* is an indicator of the measures that have been taken to minimize or prevent hazardous substances at the facility from catching fire or exploding. Normally it will be given a value of 3 on the work sheet (Figure 11). If no hazardous substances that are individually ignitable or explosive are present and those that may be hazardous in combination are segregated and isolated so that they cannot come together to form incompatible mixtures, assign this factor a value of 1.

7.2 *Waste Characteristics. Direct evidence* of ignitability or explosion potential may exist in the form of measurements with appropriate instruments. If so, assign this factor a value of 3; if not, assign a value of 0.

Additional information can be obtained from *A Method for Determining the Compatibility of Hazardous Wastes,* H. K. Hatayama, *et al.,* EPA–600/2–80–076 (1980). Assign a value using the following guidance:

Incompatibility	Assigned value
No incompatible substances are present	0
Present but do not pose a hazard	1
Present and may pose a future hazard	2
Present and posing an immediate hazard	3

Toxicity should be rated for the most toxic of the substances that can reasonably be expected to be transported away from the facility via the air route. Using the information given in Tables 4, 6, and 7, assign values as follows:

Toxicity	Assigned value
Sax level 0 or NFPA level 0	0
Sax level 1 or NFPA level 1	1
Sax level 2 or NFPA level 2	2
Sax level 3 or NFPA levels 3 or 4	3

Hazardous Waste Quantity

Assign hazardous waste quantity a value as described in Section 3.4.

5.3 *Targets. Population within a four-mile radius* is an indicator of the population which may be harmed should hazardous substances be released to the air.

The distance is measured from the location of the hazardous substances, not from the facility boundary. The population to be counted includes persons residing within the

four-mile radius as well as transients such as workers in factories, offices, restaurants, motels, or students. It excludes travelers passing through the area. If aerial photography is used in making the count, assume 3.5 individuals per dwelling unit. Select the highest value for this rating factor as follows:

DISTANCE TO POPULATION FROM HAZARDOUS SUBSTANCE

Population	0–4 miles	0–1 mile	0–½ mile	0–¼ mile
0	0	0	0	0
1 to 100	9	12	15	18
101 to 1,000	12	15	18	21
1,001 to 3,000	15	18	21	24
3,001 to 10,000	18	21	24	27
More than 10,000	21	24	27	30

Distance to sensitive environment is an indicator of the likelihood that a region that contains important biological resources or that is a fragile natural setting would suffer serious damage if hazardous substances were to be released from the facility. Assign a value from Table 10.

Land use indicates the nature and level of human activity in the vicinity of a facility. Assign highest applicable value from Table 13.

6.0 Computing the Migration Hazard Mode Score, S_M

To compute S_M, complete the work sheet (Figure 10) using the values of S_{gw}, S_{sw} and S_a obtained from the previous sections.

7.0 Fire and Explosion

Compute a score for the fire and explosion hazard mode, S_{FE}, when either a state or local fire marshall has certified that the facility presents a significant fire or explosion threat to the public or to sensitive environments or there is a demonstrated fire and explosion threat based on field observations (e.g., combustible gas indicator readings). Document the threat.

7.1 Containment. *Containment* is an indicator of the measures that have been taken to minimize or prevent hazardous substances at the facility from catching fire or exploding. Normally it will be given a value of 3 on the work sheet (Figure 11). If no hazardous substances that are individually ignitable or explosive are present and those that may be hazardous in combination are segregated and isolated so that they cannot come together to form incompatible mixtures, assign this factor a value of 1.

7.2 Waste Characteristics. *Direct evidence* of ignitability or explosion potential may exist in the form of measurements with appropriate instruments. If so, assign this factor a value of 3; if not, assign a value of 0.

TABLE 13.—VALUES FOR LAND USE (AIR ROUTE)

Assigned value—	0	1	2	3
Distance to Commercial-Industrial	>1 mile	½ to 1 mile	¼ to ½ mile	<¼ mile.
Distance to National/State Parks, Forests, Wildlife Reserves, and Residential Areas.	>2 miles	1 to 2 miles	½ to 1 mile	<½ mile.
Distance to Agricultural Lands (in Production within 5 years):				
Ag land	>1 mile	½ to 1 mile	¼ to ½ mile	<½ mile.
Prime Ag Land [1]	>2 miles	1 to 2 miles	½ to 1 mile	<½ mile.
Distance to Historic/Landmark Sites (National Register of Historic Places and National Natural Landmarks).				Within view of site or if site is subject to significant impacts.

[1] Defined in the Code of Federal Regulations, 7 CFR 657.5, 1981.

	S	S^2
Groundwater Route Score (S_{gw})		
Surface Water Route Score (S_{sw})		
Air Route Score (S_a)		
$S_{gw}^2 + S_{sw}^2 + S_a^2$		
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		

FIGURE 10
WORKSHEET FOR COMPUTING S_M

Fire and Explosion Work Sheet

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Containment	1 3	1		3	7.1
2 Waste Characteristics					7.2
Direct Evidence	0 3	1		3	
Ignitability	0 1 2 3	1		3	
Reactivity	0 1 2 3	1		3	
Incompatibility	0 1 2 3	1		3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 3 4 5	1		5	
Distance to Nearest Building	0 1 2 3	1		3	
Distance to Sensitive Environment	0 1 2 3	1		3	
Land Use	0 1 2 3	1		3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Total Targets Score				24	
4 Multiply 1 x 2 x 3				1,440	
5 Divide line 4 by 1,440 and multiply by 100		S_{FE} =			

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

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Ignitability is an indicator of the threat of fire at a facility and the accompanying potential for release of air contaminants. Assign this rating factor a value based on the NFPA classification scheme (Table 14). Table 4 gives values for a number of common compounds. Assign values as follows:

Ignitability	Assigned value
Flashpoint > 200°F, or NFPA level 0	0
Flashpoint 140°F to 200°F or NFPA level 1	1
Flashpoint 80°F to 140°F or NFPA level 2	2
Flashpoint < 80°F or NFPA levels 3 or 4	3

Reactivity. Assign values as in Section 5.2.

Incompatibility. Assign values as in Section 5.2.

Hazardous Waste Quantity. Assign values as in Section 3.4.

TABLE 14.—NFPA IGNITABILITY LEVELS AND ASSIGNED VALUES

NFPA level	Assigned value
4 Very flammable gases, very volatile flammable liquids, and materials that in the form of dusts or mists readily form explosive mixtures when dispersed in air	3
3 Liquids which can be ignited under all normal temperature conditions. Any materials that ignites spontaneously at normal temperatures in air	
2 Liquids which must be moderately heated before ignition will occur and solids that readily give off flammable vapors	2
1 Materials that must be preheated before ignition can occur. Most combustible solids have a flammability rating of 1	1
0 Materials that will not burn	0

7.3 *Targets. Distance to nearest population* is the distance from the hazardous substance to the nearest building or area in which one or more persons are likely to be located either for residential, educational, business, occupational, or recreational purposes. It is an indicator of the potential for harm to humans from fire and explosion. The building or area need not be off-site. Assign values as follows:

Distance	Assigned value
> 2 miles	0
1 mile to 2 mile	1
¼ mile to 1 miles	2
201 feet to ¼ mile	3
51 feet to 200 feet	4
0 to 50 feet	5

Distance to nearest building is an indicator of the potential for property damage as a result of fire or explosion. Assign a value as follows:

Distance	Assigned value
> ¼ mile	0
201 feet to ¼ mile	1
51 feet to 200 feet	2
0 to 50 feet	3

Distance to nearest sensitive environment is measured from the hazardous substances, not from the facility boundary. It is an indicator of potential harm to a sensitive environment from fire or explosion at the facility. Select the highest value using the guidance provided in Table 15 *except* assign a value of 3 where fire could be expected to spread to a sensitive environment even though that environment is more than 100 feet from the hazardous substance.

TABLE 15.—VALUES FOR SENSITIVE ENVIRONMENTS (FIRE AND EXPLOSION)

Assigned value =	0	1	2	3
Distance to Wetlands[1]	> 100 feet			< 100 feet.
Distance to Critical Habitat[2]	> ¼ mile	1000 feet to ¼ mile	100 to 1000 feet	< 100 feet.

[1] Wetland is defined by EPA in the Code of Federal Regulations 40 CFR Part 230, Appendix A, 1980.
[2] Designated by the U.S. Fish and Wildlife Service.

Land Use. Assign values as in Section 5.3.

Population within two-mile radius (measured from the location of the hazardous substance, not from the facility boundary) is a rough indicator of the population at risk in the event of fire or explosion at a facility. The population to be counted includes those residing within the two mile radius as well as people regularly in the vicinity such as workers in factories, offices, or students. It does not include travelers passing through the area. If aerial photography is used in making the count, assume 3.8 individuals per dwelling. Assign values as follows:

Population	Assigned value
0	0
1 to 100	1
101 to 1,000	2
1,001 to 3,000	3
3,001 to 10,000	4
> 10,000	5

Number of buildings within two mile radius (measured from the hazardous substance, not from the facility boundary) is a rough indicator of the property damage that could result from fire and explosion at a facility. Assign values to this factor as follows:

Number of buildings	Assigned value
0	0
1 to 26	1
27 to 260	2
261 to 790	3
791 to 2600	4
> 2600	5

8.0 *Direct Contact.* The direct contact hazard mode refers to the potential for injury by direct contact with hazardous substances at the facility.

8.1 *Observed Incident.* If there is a confirmed instance in which contact with hazardous substances at a facility has caused injury, illness, or death to humans or domestic or wild animals, enter a value of 45 on line 1 of the work sheet (Figure 12) and proceed to line 4 (toxicity). Document the incident giving the date, location and pertinent details. If no such instance is known, enter "0" on line 1 and proceed to line 2.

8.2 *Accessibility. Accessibility to hazardous substance* refers to the measures taken to limit access by humans or animals to hazardous substances. Assign a value using the following guidance:

Barrier	Assigned value
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the facility; or an artificial or natural barrier (e.g., a fence combined with a cliff), which completely surrounds the facility; and a means to control entry, at all times, through the gates or other entrances to the facility (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the facility)	0
Security guard, but no barrier	1
A barrier, but no separate means to control entry	2
Barriers do not completely surround the facility	3

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Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
[1] Observed Incident	0 45	1		45	8.1
If line [1] is 45, proceed to line [4] If line [1] is 0, proceed to line [2]					
[2] Accessibility	0 1 2 3	1		3	8.2
[3] Containment	0 15	1		15	8.3
[4] Waste Characteristics Toxicity	0 1 2 3	5		15	8.4
[5] Targets					8.5
Population Within a 1-Mile Radius	0 1 2 3 4 5	4		20	
Distance to a Critical Habitat	0 1 2 3	4		12	
Total Targets Score				32	
[6] If line [1] is 45, multiply [1] x [4] x [5] If line [1] is 0, multiply [2] x [3] x [4] x [5]				21,600	
[7] Divide line [6] by 21,600 and multiply by 100		S_{DC} =			

FIGURE 12
DIRECT CONTACT WORK SHEET

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8.3 *Containment. Containment* indicates whether the hazardous substance itself is accessible to direct contact. For example, if the hazardous substance at the facility is in surface impoundments, containers (sealed or unsealed), piles, tanks, or landfills with a cover depth of less than 2 feet, or has been spilled on the ground or other surfaces easily contacted (e.g., the bottom of shallow pond or creek), assign this rating factor a value of 15. Otherwise, assign a value of 0.

8.4 *Waste Characteristics. Toxicity.* Assign a value as in Section 3.4.

8.5 *Targets. Population within one-mile radius* is a rough indicator of the population that could be involved in direct contact incidents at an uncontrolled facility. Assign a value as follows:

Population	Assigned value
0	0
1 to 100	1
101 to 1,000	2
1,001 to 3,000	3
3,001 to 10,000	4
>10,000	5

Distance to a critical habitat (of an endangered species) is a rough measure of the probability of harm to members of an endangered species by direct contact with hazardous substance. Assign a value as follows:

Distance	Assigned value
< 1 mile	0
¼ to 1 mile	1
½ to ¼ mile	2
> ½ mile	3

[FR Doc. 82-19141 Filed 7-15-82; 8:45 am]
BILLING CODE 6560-50-M